STIC-Biotech/ChemLib

54890

From: Chan, Christina
Sent: Wednesday, November 14, 2001 6:05 PM
To: Landsman, Robert; STIC-Biotech/ChemLib
Subject: RE: rush 09/257,272

Please rush. Thanks Chris

-----Original Message-----
Fr m: Landsman, Robert
Sent: Wednesday, November 14, 2001 6:03 PM
To: Chan, Christina
Subject: rush 09/257,272

chris - can you rush this? its a transfered amended "2" which needs an oligo search. thanks. bob

COMMERCIAL DATABASES ONLY:

oligo search of at least 30 contiguous amino acids of SEQ ID NO:2

oligo search of at least 30 contiguous amino acids of SEQ ID NO:4

thanks

Robert Landsman, Ph.D.
Patent Examiner
U.S. Patent and Trademark Office
AU 1647
CM1 - 9D11
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Robert.Landsman@uspto.gov
703.306.3407

Searcher: _____
Phone: _____
Location: _____
Date Picked Up: 11/15/01
Date Completed: 11/15/01
Searcher Prep/Review: _____
Clerical: _____
Online time: _____

TYPE OF SEARCH:
NA Sequences: _____
AA Sequences: 2
Structures: _____
Bibliographic: _____
Litigation: _____
Full text: _____
Patent Family: _____
Other: _____

VENDOR/COST(where applic.)
STN: _____
DIALOG: _____
Questel/Orbit: _____
DRLink: _____
Lexis/Nexis: _____
Sequence Sys.: 02
WWW/Internet: _____
Other (specify): _____

GenCore version 4.5

OM protein - protein search, using sw model

Run on: November 15, 2001, 10:06:28 ; Search time 34.67 Seconds
(without alignments)
732.664 Million cell updates/sec

Title: US-09-257-272-2
Perfect score: 419
Sequence: 1 MHSLGFFSVACSLLAAALLP.....SYSEEVCRCVPSYWQRPQMS 419

Scoring table: OLIGO
Gapop 60.0 , Gapext 60.0

Searched: 412676 seqs, 60623988 residues

Word size : 30

Total number of hits satisfying chosen parameters: 32

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Listing first 45 summaries

Database : A_Geneseq_0601:*
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22: /SIDS8/gcgdata/geneseq/geneseqp/AA2001.DAT:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	419	100.0	419	20	AAY30518	Vascular endotheli
2	419	100.0	419	20	AAY22320	Full length human
3	419	100.0	419	21	AAY97144	Vascular endotheli
4	419	100.0	419	22	AAY97570	Human VEGF-B prote
5	410	97.9	419	18	AAW17837	Human foetal liver
6	410	97.9	419	18	AAW00932	Human Flt4 recepto
7	410	97.9	419	19	AAW75740	Human vascular end
8	410	97.9	419	20	AAW86203	Human vascular end
9	410	97.9	419	21	AAB10648	Human VEGC protein
10	410	97.9	419	21	AAB29048	Human VEGF-C prote
11	410	97.9	419	21	AAY70749	Human prepro-vascu
12	410	97.9	419	21	AAY70982	Human vascular end
13	410	97.9	419	22	AAB37605	Human VEGF-C. Hom
14	393	93.8	399	20	AAW86237	Human VEGF-C full
15	350	83.5	350	20	AAY30519	A truncated vascul
16	350	83.5	350	20	AAY22321	Truncated human VE
17	350	83.5	350	21	AAY97145	Truncated vascular
18	350	83.5	350	22	AAY97577	Human VEGF-2 prote
19	332	79.2	419	18	AAW11478	Human vascular end
20	312	74.5	318	20	AAY08284	Human growth facto
21	309	73.7	350	16	AAR82686	Vascular endotheli
22	309	73.7	419	18	AAW13833	Human vascular end
23	309	73.7	419	19	AAW75751	Vascular endotheli
24	301	71.8	307	20	AAW86222	Human VEGF-C trunc
25	296	70.6	302	20	AAW86223	Human VEGF-C trunc
26	291	69.5	297	20	AAW86224	Human VEGF-C trunc
27	286	68.3	292	20	AAW86225	Human VEGF-C trunc
28	113	27.0	113	20	AAY08285	Human growth facto
29	68	16.2	415	18	AAW00933	Mouse Flt4 recepto
30	68	16.2	415	19	AAW75742	Mouse vascular end
31	31	7.4	418	18	AAW00934	Quail Flt4 recepto
32	31	7.4	418	19	AAW75743	Quail vascular end

ALIGNMENTS

RESULT 1
AAY30518
ID AAY30518 standard; Protein; 419 AA.
XX
AC AAY30518;
XX
DT 16-NOV-1999 (first entry)
XX
DE Vascular endothelial growth factor-2 (VEGF-2).
XX
KW Human vascular endothelial growth factor-2; VEGF-2;
KW vascular endothelial cell growth; endothelial cell migration;
KW angiogenesis; blood pressure; blood flow; immune system disorder;
KW immune cell; cancer; autoimmune disorder; blood protein disorder;
KW ataxia telangiectasia; common variable immunodeficiency;
KW Digeorge syndrome; HIV infection; HTLV-BLV infection;
KW leukocyte adhesion deficiency syndrome; lymphopenia;
KW phagocyte bactericidal dysfunction; severe combined immunodeficiency;
KW Wiskott-Aldrich disorder; anemia; thrombocytopenia; hemoglobinuria;
KW allergy; asthma; allergic asthma.
XX
OS Homo sapiens.
XX
PN WO9946364-A1.
XX
PD 16-SEP-1999.
XX
PF 10-MAR-1999; 99WO-US05021.
XX
PR 13-MAR-1998; 98US-0042105.
PR 30-JUN-1998; 98US-0107997.
XX
PA (HUMA-) HUMAN GENOME SCI INC.
XX
PI Rosen CA, Cao L, Hu J;
XX
DR WPI; 1999-551399/46.
DR N-PSDB; AAZ10523.
XX
PT New human vascular endothelial growth factor-2, used for treating, e.g.
PT immune disorders and cancers -
XX
PS Claim 12; Fig 1A-E; 222pp; English.
XX
CC The present sequence represents vascular endothelial growth factor-2
CC (VEGF-2). The VEGF-2 polypeptides have activities similar to VEGF. The
CC VEGF-2 polypeptides stimulate the growth of vascular endothelial cells,

```
CC   stimulate endothelial cell migration, stimulate angiogenesis, decrease
CC   blood pressure, and increase blood flow. The polynucleotides and
CC   polypeptides can be used for preventing, treating or ameliorating a
CC   medical condition. The VEGF-2 polypeptides or polynucleotides may be
CC   useful in treating deficiencies or disorders of the immune system, by
CC   activating or inhibiting the proliferation, differentiation, or
CC   mobilization (chemotaxis) of immune cells. The etiology of these immune
CC   deficiencies or disorders may be genetic, somatic, such as cancer or
CC   some autoimmune disorders, acquired (e.g. by chemotherapy or toxins), or
CC   infectious. Examples of immunologic deficiency syndromes include blood
CC   protein disorders, ataxia telangiectasia, common variable
CC   immunodeficiency, Digeorge syndrome, HIV infection, HTLV-BLV infection,
CC   leukocyte adhesion deficiency syndrome, lymphopenia, phagocyte
CC   bactericidal dysfunction, severe combined immunodeficiency (SCIDs),
CC   Wiskott-Aldrich disorder, anemia, thrombocytopenia, or hemoglobinuria.
CC   They can also be used to modulate emostatic or thrombolytic activity.
CC   Similarly allergic reactions and conditions such as asthma (particularly
CC   allergic asthma) or other respiratory problems, may also be treated.
XX
SQ   Sequence   419 AA;


  Query Match             100.0%;  Score 419;  DB 20;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches  419;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

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Qy     121 SIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSY 180
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Qy     181 LSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAAN 240
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Db     181 lsktlfeitvplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaan 240

Qy     241 KTCPTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLR 300
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     241 ktcptnymwnnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcraglr 300

Qy     301 PASCGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCAC 360
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Db     301 pascgphkeldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcac 360

Qy     361 ECTESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWQRPQMS 419
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Db     361 ectespqkcllkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsywqrpqms 419


RESULT   2
AAY22320
ID   AAY22320 standard; Protein; 419 AA.
XX
AC   AAY22320;
XX
DT   22-SEP-1999  (first entry)
XX
DE   Full length human VEGF2 protein sequence.
XX
KW   VEGF2; vascular endothelial growth factor 2; angiogenesis; bone damage;
KW   endothelial cell proliferation; tissue damage; therapy.
XX
OS   Homo sapiens.
XX
PN   US5932540-A.
XX
PD   03-AUG-1999.
XX
PF   24-DEC-1997;   97US-0999811.
XX
PR   24-DEC-1997;   97US-0999811.
PR   08-MAR-1994;   94US-0207550.
PR   06-JUN-1995;   95US-0465968.
XX
PA   (HUMA-) HUMAN GENOME SCI INC.
XX
PI   Cao L,  Hu J,  Rosen CA;
XX
DR   WPI; 1999-443606/37.
DR   N-PSDB; AAX84837.
XX
PT   Vascular endothelial growth factor 2 for wound healing and vascular
PT   repair
XX
PS   Claim 1; Fig 1; 49pp; English.
XX
CC   This sequence is the vascular endothelial growth factor 2 (VEGF2),
CC   of the invention. The isolated polypeptide is useful for stimulating
CC   angiogenesis, by promoting the proliferation of endothelial cells, for
CC   the treatment of a wound, or for the treatment of tissue or bone damage.
XX
SQ   Sequence   419 AA;


  Query Match             100.0%;  Score 419;  DB 20;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches  419;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

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Db     121 sidnewrktqcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsy 180

Qy     181 LSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAAN 240
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Qy     241 KTCPTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLR 300
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Qy     301 PASCGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCAC 360
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Db     301 pascgphkeldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcac 360

Qy     361 ECTESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWQRPQMS 419
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Db     361 ectespqkcllkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsywqrpqms 419


RESULT   3
AAY97144
ID   AAY97144 standard; Protein; 419 AA.
XX
AC   AAY97144;
XX
DT   22-DEC-2000  (first entry)
XX
DE   Vascular endothelial growth factor-2 (VEGF-2).
XX
KW   Vascular endothelial growth factor 2; VEGF-2; retina; angiogenesis;
KW   treatment; injury; degeneration; photoreceptors; eye;
KW   angioid streaks; retinitis; pigmentosa; human;
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KW   age-related macular degeneration; diabetic retinopathy.
XX
OS   Homo sapiens.
XX
PN   WO200045835-A1.
XX
PD   10-AUG-2000.
XX
PF   07-FEB-2000; 2000WO-US03047.
XX
PR   08-FEB-1999;   99US-0119179.
PR   12-FEB-1999;   99US-0119926.
PR   03-JUN-1999;   99US-0137796.
PR   22-DEC-1999;   99US-0171505.
XX
PA   (HUMA-) HUMAN GENOME SCI INC.
XX
PI   Rosen CA, Alderson R, Melder R, Roschke V, Ruben SM;
XX
DR   WPI; 2000-532862/48.
DR   N-PSDB; AAA52080.
XX
PT   Treating injury or degeneration of photoreceptors comprises
PT   administering to a subject vascular endothelial growth factor 2
PT   (VEGF-2)
XX
PS   Claim 31; Fig 1a-e; 252pp; English.
XX
CC   Administration of vascular endothelial growth factor 2 (VEGF-2)
CC   to a patient can be used for treating injury or degeneration of
CC   photoreceptors associated with e.g. angioid streaks, retinitis
CC   pigmentosa, age-related macular degeneration, diabetic retinopathy,
CC   etc. VEGF-2 promotes angiogenesis, the formation of new blood
CC   vessels in the retina.
XX
SQ   Sequence   419 AA;
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Qy     181 LSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAAN 240
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Qy     241 KTCPTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLR 300
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Db     361 ectespqkcllkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsywqrpqms 419
```

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RESULT   4
AAY97570
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ID   AAY97570 standard; Protein; 419 AA.
XX
AC   AAY97570;
XX
DT   05-APR-2001  (first entry)
XX
DE   Human VEGF-B protein sequence.
XX
KW   Human; angiogenic protein; wound healing; vascular tissue repair;
KW   peripheral arterial disease; critical limb ischaemia; coronary disease;
KW   angiogenesis; tumour; inflammation; diabetic retinopathy; psoriasis;
KW   rheumatoid arthritis; autoimmune disease; allergy; cancer; therapy;
KW   infectious disease; neurodegeneration;
KW   vascular endothelial growth factor-B; VEGF-B.
XX
OS   Homo sapiens.
XX
PN   WO200075163-A1.
XX
PD   14-DEC-2000.
XX
PF   01-JUN-2000; 2000WO-US14925.
XX
PR   03-JUN-1999;   99US-0137796.
XX
PA   (HUMA-) HUMAN GENOME SCI INC.
XX
PI   Rosen CA,  Ruben SM,  Hu J,  Cao L;
XX
DR   WPI; 2001-071057/08.
DR   N-PSDB; AAA91004.
XX
PT   New nucleic acid encoding angiogenic proteins, useful e.g. for
PT   promoting healing of wounds and treating peripheral arterial disease,
PT   critical limb ischaemia or coronary disease -
XX
PS   Claim 11; Fig 1; 244pp; English.
XX
CC   This sequence is vascular endothelial growth factor-B (VEGF-B),
CC   which is an angiogenic protein of the invention. The angiogenic proteins
CC   and the DNA sequences encoding them, are used to prevent, treat or
CC   ameliorate disease and to detect diseases, or susceptibility, by
CC   detecting mutations or the presence or amount of angiogenic protein
CC   expression. Particularly they are used to stimulate wound healing,
CC   growth of damaged bone and tissue, and for repair of vascular tissue,
CC   especially peripheral arterial disease, critical limb ischaemia or
CC   coronary disease. Antagonists of the sequences are used to inhibit
CC   angiogenesis in tumours and to treat inflammation (where associated with
CC   increased vascular permeability), diabetic retinopathy, rheumatoid
CC   arthritis or psoriasis. Agonists are also useful for stimulating
CC   (lymph)angiogenesis. The proteins are also used to identify specific
CC   binding agents (potential therapeutic agents) and to raise antibodies.
CC   The antibodies are useful as therapeutic (ant)agonists; for detection,
CC   purification and targeting of proteins for in vivo or in vitro diagnosis
CC   (including imaging) or for therapy (including when linked to e.g. a label
CC   or cytotoxin); and for immunotyping of cells, e.g. for detecting minimal
CC   residual disease or haematopoietic progenitor/stem cells. It is also
CC   contemplated that the sequences might be useful for treating a very wide
CC   range of other disorders, e.g. autoimmune diseases; allergy; cancer;
CC   infectious diseases (viral, bacterial, fungal or parasitic);
CC   neurodegeneration, also as chemotactic agents or for stimulating
CC   regeneration of the nervous system etc.
XX
SQ   Sequence   419 AA;
```

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  Query Match           100.0%;  Score 419;  DB 22;  Length 419;
  Best Local Similarity  100.0%;  Pred. No. 0;
  Matches  419;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

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RESULT 5
AAW17837
ID AAW17837 standard; Protein; 419 AA.
XX
AC AAW17837;
XX
DT 13-JAN-1998 (first entry)
XX
DE Human foetal liver kinase A binding protein flk-1bp.
XX
KW Foetal liver kinase 1 binding protein; human; flk-1bp;
KW receptor tyrosine kinase; vasculogenesis; angiogenesis;
KW wound healing; tumour; therapy; antagonist; antibody.
XX
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT Peptide 1..20
FT /label= Sig_peptide
FT Protein 21..419
FT /label= Mat_protein
FT /note= "(Claim 10)"
FT Peptide 21..35
FT /label= N-terminal
FT /note= "(Claim 9)"
XX
PN WO9717442-A1.
XX
PD 15-MAY-1997.
XX
PF 05-NOV-1996; 96WO-US17584.
XX
PR 08-NOV-1995; 95US-0554374.
XX
PA (IMMV) IMMUNEX CORP.
XX
PI Lyman SD;
XX
DR WPI; 1997-281031/25.
DR N-PSDB; AAT68811.
XX
PT DNA encoding a human foetal liver kinase 1 binding protein - used
PT to treat conditions with insufficient protein, deliver agents to
PT cells and identify antagonists to treat protein-mediated conditions
XX
PS Claim 1; Page 30-32; 43pp; English.
XX
CC This polypeptide comprises a human foetal liver kinase 1 binding
CC protein (flk-1bp) (see AAW17837) that binds to the receptor tyrosine
CC kinase flk-1 expressed on vascular endothelial and other cells.
CC The mature flk1-bp can be secreted from host cells transformed with
CC an expression vector including an isolated flk-1bp cDNA clone (see
CC AAT68811). Flk-1bp can be used to isolate cells to which it binds,
CC for use in studying the roles of such cells and of flk-1 in
CC vasculogenesis and angiogenesis. Angiogenesis inhibition or
CC increased vascularisation may be clinically desirable (e.g. to
CC suppress solid tumour growth or in wound healing, respectively).
CC The flk-1bp can be administered to treat conditions with defective
CC or insufficient flk-1. Polypeptides may also act as carriers to
CC deliver diagnostic/therapeutic agents to cells to which flk1-bp
CC binds, to generate antibodies, and to identify flk-1bp antagonists
CC useful for treating flk-1bp mediated conditions.
XX
SQ Sequence 419 AA;

Query Match 97.9%; Score 410; DB 18; Length 419;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 410; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy       4 LGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQLRSV 63
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       4 lgffsvacsllaaallpgpreapaaaaafesgldlsdaepdageatayaskdleeqlrsv 63

Qy      64 SSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSID 123
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      64 ssvdelmtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilksid 123

Qy     124 NEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSK 183
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     124 newrktqcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsylsk 183

Qy     184 TLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTC 243
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     184 tlfeitvplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaanktc 243

Qy     244 PTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPAS 303
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     244 ptnymwnnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcraglrpas 303

Qy     304 CGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECT 363
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     304 cgphkeldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcacect 363

Qy     364 ESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYW 413
           |||||||||||||||||||||||||||||||||||||||||||||||||||
Db     364 espqkcllkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsyw 413
```

RESULT 6
AAW00932
ID AAW00932 standard; Protein; 419 AA.
XX
AC AAW00932;
XX
DT 10-NOV-1997 (first entry)
XX
DE Human Flt4 receptor tyrosine kinase ligand VEGF-C.
XX
KW VEGF-C; Flt4; receptor tyrosine kinase; VEGFR-3; human;
KW vascular endothelial growth factor receptor-3; ligand;
KW angiogenesis; wound healing; lymph vessel; lymphangioma;
KW cancer; metastasis; therapy; diagnosis; antibody; inhibitor.
XX
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT Peptide 1..102
FT /label= Prepro_peptide
FT Peptide 32..227

```
FT                   /note= "preferred active fragment of VEGF-C,
FT                         retaining Flt4 ligand activity (Claim 15)"
FT   Peptide         103..217
FT                   /note= "preferred active fragment of VEGF-C,
FT                         retaining Flt4 ligand activity (Claim 12)"
FT   Peptide         103..225
FT                   /note= "preferred active fragment of VEGF-C,
FT                         retaining Flt4 ligand activity (Claim 13)"
FT   Peptide         103..227
FT                   /note= "preferred active fragment of VEGF-C,
FT                         retaining Flt4 ligand activity (Claim 14)"
FT   Peptide         113..213
FT                   /note= "preferred active fragment of VEGF-C,
FT                         retaining Flt4 ligand activity (Claim 10)"
FT   Peptide         113..227
FT                   /note= "preferred active fragment of VEGF-C,
FT                         retaining Flt4 ligand activity (Claim 11)"
FT   Peptide         131..211
FT                   /note= "preferred active fragment of VEGF-C,
FT                         retaining Flt4 ligand activity (Claim 9)"
FT   Peptide         161..221
FT                   /note= "preferred active fragment of VEGF-C,
FT                         retaining Flt4 ligand activity (Claim 8)"
XX
PN   WO9705250-A2.
XX
PD   13-FEB-1997.
XX
PF   01-AUG-1996;   96WO-FI00427.
XX
PR   28-JUN-1996;   96US-0671573.
PR   01-AUG-1995;   95US-0510133.
PR   12-JAN-1996;   96US-0585895.
PR   14-FEB-1996;   96US-0601132.
XX
PA   (UYHE-) UNIV HELSINKI LICENSING LTD OY.
XX
PI   Alitalo K,  Joukov V;
XX
DR   WPI; 1997-145688/13.
DR   N-PSDB; AAT84276.
XX
PT   Flt4 receptor tyrosine kinase ligand and related nucleic acid - used
PT   to modulate growth of endothelial cells and for diagnosis of
PT   endothelial cell diseases
XX
PS   Claim 7; Page 112-113; 183pp; English.
XX
CC   This polypeptide comprises the pre-pro sequence of human VEGF-C,
CC   a novel ligand that binds specifically to human Flt4 receptor
CC   tyrosine kinase (VEGFR-3), stimulating phosphorylation of the
CC   receptor.  Its sequence was deduced from a cDNA clone (AAT84276)
CC   obtd. from a PC-3 prostatic adenocarcinoma cell (ATCC CRL 1435)
CC   library.  The polypeptide, or its active fragments, can be
CC   expressed in transformed or transfected host cells for use in
CC   claimed methods for detecting endothelial cells (e.g. to image
CC   lymphatic vessels, endothelial venules, Flt4 receptor in
CC   histochemical tissue) and also to modulate the growth of mammalian
CC   endothelial cells (e.g. to accelerate angiogenesis and to promote
CC   endothelial function of lymphatic vessels).  Inhibitors of
CC   VEGF-C, such as antibodies, can be used to control endothelial
CC   cell proliferation, e.g. lymphangioma or metastatic cancer.
CC   Mouse and quail VEGF-C sequences (see AAW00934-35) have also been
CC   isolated.
XX
SQ   Sequence   419 AA;
```

```
  Query Match             97.9%;  Score 410;  DB 18;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches  410;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       4 LGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQLRSV 63
                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       4 lgffsvacsllaaallpgpreapaaaaafesgldlsdaepdageatayaskdleeqlrsv 63

Qy      64 SSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSID 123
                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      64 ssvdelmtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilksid 123

Qy     124 NEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSK 183
                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     124 newrktqcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsylsk 183

Qy     184 TLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTC 243
                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     184 tlfeitvplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaanktc 243

Qy     244 PTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPAS 303
                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     244 ptnymwnnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcraglrpas 303

Qy     304 CGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECT 363
                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     304 cgphkeldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcacect 363

Qy     364 ESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYW 413
                 ||||||||||||||||||||||||||||||||||||||||||||||||||
Db     364 espqkcllkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsyw 413
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```
RESULT   7
AAW75740
ID   AAW75740 standard; Protein; 419 AA.
XX
AC   AAW75740;
XX
DT   20-NOV-1998  (first entry)
XX
DE   Human vascular endothelial growth factor C protein.
XX
KW   Flt4; vascular endothelial growth factor C; vascular endothelial cell;
KW   lymphatic endothelial cell; myelopoiesis; angiogeneses; inflammation;
KW   lymphangiogenesis; oedema; elephantiasis; Milroy's disease.
XX
OS   Homo sapiens.
XX
PN   WO9833917-A1.
XX
PD   06-AUG-1998.
XX
PF   02-FEB-1998;   98WO-US01973.
XX
PR   05-FEB-1997;   97US-0795430.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
PA   (UYHE-) UNIV HELSINKI LICENSING LTD.
XX
PI   Alitalo K,  Joukov V;
XX
DR   WPI; 1998-437470/37.
DR   N-PSDB; AAV52576.
XX
PT   New isolated vascular endothelial growth factor polypeptide(s) -
PT   used to develop products for treating, e.g. cancers, inflammation,
PT   oedema, granulocytopenia or for wound healing or tissue
PT   transplantation
XX
PS   Claim 1; Page 112-115; 177pp; English.
XX
CC   The vascular endothelial growth factor C (VEGF-C) polypeptides have
CC   activities affecting growth and migration of vascular endothelial cells,
CC   promoting growth of lymphatic endothelial cells and lymphatic vessels,
CC   increasing vascular permeability, and affecting myelopoiesis.  The
CC   products can be used for stimulating angiogeneses, for inhibiting
CC   angiogenesis, for stimulating lymphangiogenesis, treatment or prevention
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CC   of inflammation, oedema, elephantiasis, or Milroy's disease.  They can
CC   also be used to modulate myelopoiesis, e.g. treating granulocytopenia.
CC   They can also be used for modulating the growth of endothelial cells.
CC   They can also be used to stimulate lymphocyte production and maturation,
CC   and to promote or inhibit trafficking of leucocytes between tissues and
CC   lymphatic vessels or to affect migration in and out of the thymus.
XX
SQ   Sequence   419 AA;


  Query Match             97.9%;  Score 410;  DB 19;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches  410;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       4 LGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQLRSV 63
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       4 lgffsvacsllaaallpgpreapaaaaafesgldlsdaepdageatayaskdleeqlrsv 63

Qy      64 SSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSID 123
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      64 ssvdelmtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilksid 123

Qy     124 NEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSK 183
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     124 newrktqcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsylsk 183

Qy     184 TLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTC 243
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     184 tlfeitvplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaanktc 243

Qy     244 PTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPAS 303
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     244 ptnymwnnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcraglrpas 303

Qy     304 CGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECT 363
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     304 cgphkeldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcacect 363

Qy     364 ESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYW 413
           |||||||||||||||||||||||||||||||||||||||||||||||||||
Db     364 espqkcllkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsyw 413


RESULT   8
AAW86203
ID   AAW86203 standard; protein; 419 AA.
XX
AC   AAW86203;
XX
DT   16-FEB-1999  (first entry)
XX
DE   Human vascular endothelial growth factor (VEGF)-C sequence.
XX
KW   VEGF; VRP; vascular endothelial growth factor; VEGF-related protein;
KW   recombinant; truncated; gene therapy; angiogenesis; cardiac ischaemia;
KW   coronary; collateral vessel development; cell growth; migration; heart;
KW   lower limb ischaemia; stroke; peripheral vascular disease; intestine;
KW   wound healing; skin; vascular permeability.
XX
OS   Homo sapiens.
XX
PN   WO9849300-A2.
XX
PD   05-NOV-1998.
XX
PF   20-APR-1998;   98WO-US07801.
XX
PR   25-APR-1997;   97US-0842984.
XX
PA   (COLL-) COLLATERAL THERAPEUTICS.
XX
PI   Bohlen P;
XX
DR   WPI; 1999-009426/01.
XX
PT   New truncated vascular endothelial growth factor-related protein
PT   subunits - lack part of the N-terminal sequence, used to stimulate
PT   angiogenesis, e.g. for treating heart disease and ischaemia
XX
PS   Disclosure; Fig 1; 113pp; English.
XX
CC   This represents the amino acid sequence of human vascular endothelial
CC   growth factor (VEGF)-C protein. The invention provides truncated VRP
CC   (VEGF-related protein) subunits that have at least one amino acid
CC   N-terminal to the first Cys of the core sequence deleted. Host cells
CC   transformed or transfected with expression vectors containing nucleic
CC   acids encoding the truncated VRP subunits are used to produce the
CC   truncated proteins recombinantly. The truncated VRP subunits, optionally
CC   expressed from gene therapy vectors, have in vivo and in vitro angiogenic
CC   activity and are used to stimulate angiogenesis, particularly coronary
CC   collateral vessel development in cases of cardiac ischaemia; to stimulate
CC   endothelial cell growth and migration in vitro; to treat heart disease;
CC   to treat ischaemia (e.g.cardiac, chronic coronary or chronic lower limb
CC   ischaemia; stroke and peripheral vascular disease); to promote healing of
CC   wounds (of skin or intestines), and to increase vascular permeability.
XX
SQ   Sequence   419 AA;


  Query Match             97.9%;  Score 410;  DB 20;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches  410;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       4 LGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQLRSV 63
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       4 lgffsvacsllaaallpgpreapaaaaafesgldlsdaepdageatayaskdleeqlrsv 63

Qy      64 SSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSID 123
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      64 ssvdelmtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilksid 123

Qy     124 NEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSK 183
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     124 newrktqcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsylsk 183

Qy     184 TLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTC 243
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     184 tlfeitvplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaanktc 243

Qy     244 PTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPAS 303
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     244 ptnymwnnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcraglrpas 303

Qy     304 CGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECT 363
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     304 cgphkeldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcacect 363

Qy     364 ESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYW 413
           |||||||||||||||||||||||||||||||||||||||||||||||||||
Db     364 espqkcllkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsyw 413


RESULT   9
AAB10648
ID   AAB10648 standard; Protein; 419 AA.
XX
AC   AAB10648;
XX
DT   19-JAN-2001  (first entry)
XX
DE   Human VEGC protein.
XX
KW   VEGF-X; vascular endothelial growth factor; human; vulnerary; cytostatic;
KW   antirheumatic; antiarthritic; antipsoriatic; antidiabetic; treatment;
KW   angiogenesis regulator; vascularization regulator; cancer; psoriasis;
KW   rheumatoid arthritis; diabetic retinopathy; blood vessel; organ repair;
```

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KW   tissue regeneration; tissue repair; wound; dermal ulcer; pressure sore;
KW   venous sore; diabetic ulcer; burns; skin graft growth; VEGC.
XX
OS   Homo sapiens.
XX
PN   WO200037641-A2.
XX
PD   29-JUN-2000.
XX
PF   21-DEC-1999;   99WO-US30503.
XX
PR   22-DEC-1998;   98GB-0028377.
PR   18-MAR-1999;   99US-0124967.
PR   08-NOV-1999;   99US-0164131.
XX
PA   (JANC ) JANSSEN PHARM NV.
XX
PI   Gordon RD, Sprengel JJ, Yon JR, Dijkmans JJH, Gosiewska A;
PI   Dhanaraj SN, Xu J;
XX
DR   WPI; 2000-442669/38.
XX
PT   New vascular endothelial growth factor protein, useful for treating or
PT   preventing diseases associated with inappropriate angiogenesis activity
PT   such as cancer, rheumatoid arthritis, psoriasis and wounds -
XX
PS   Disclosure; Fig 11; 127pp; English.
XX
CC   This invention describes a novel vascular endothelial growth factor-X
CC   (VEGF-X) protein (Ia) and its encoding polynucleotide (IIa) which has
CC   vulnerary, cytostatic, antirheumatic, antiarthritic, antipsoriatic and
CC   antidiabetic activity and acts as an angiogenesis and vascularization
CC   regulator. An antisense molecule of the invention is useful for treating
CC   or preventing cancer, rheumatoid arthritis, psoriasis and diabetic
CC   retinopathy by inhibiting angiogenic activity or inappropriate
CC   vascularization including formation and proliferation of new blood
CC   vessels, growth and development of tissues, tissue regeneration and organ
CC   and tissue repair in a subject. The products of the invention are useful
CC   for preparing medicaments for treating wounds such as dermal ulcers,
CC   pressure sores, venous sores, diabetic ulcers and burns and to promote
CC   skin graft growth, tissue repair, proliferation of new blood vessels,
CC   tissue regeneration and organ repair by promoting angiogenic activity or
CC   vascularization. This sequence represents the human VEGC protein used
CC   to illustrate the method of the invention.
XX
SQ   Sequence   419 AA;
```

```
  Query Match             97.9%;  Score 410;  DB 21;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches  410;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       4 LGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQLRSV 63
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       4 lgffsvacsllaaallpgpreapaaaaafesgldlsdaepdageatayaskdleeqlrsv 63

Qy      64 SSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSID 123
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      64 ssvdelmtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilksid 123

Qy     124 NEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSK 183
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     124 newrktqcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsylsk 183

Qy     184 TLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTC 243
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     184 tlfeitvplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaanktc 243

Qy     244 PTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPAS 303
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     244 ptnymwnnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcraglrpas 303

Qy     304 CGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECT 363
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     304 cgphkeldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcacect 363

Qy     364 ESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYW 413
           |||||||||||||||||||||||||||||||||||||||||||||||||||
Db     364 espqkcllkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsyw 413
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```
RESULT  10
AAB29048
ID   AAB29048 standard; Protein; 419 AA.
XX
AC   AAB29048;
XX
DT   31-JAN-2001  (first entry)
XX
DE   Human VEGF-C protein sequence.
XX
KW   Human; Flt4; fms-like tyrosine kinase 4; lymphoedema;
KW   vascular endothelial growth factor receptor 3; VEGFR-3;
KW   Milroy-Nonne syndrome; lymphoedema praecox; VEGF-C;
KW   vascular endothelial growth factor C.
XX
OS   Homo sapiens.
XX
PN   WO200058511-A1.
XX
PD   05-OCT-2000.
XX
PF   26-MAR-1999;   99WO-US06133.
XX
PR   26-MAR-1999;   99WO-US06133.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
PA   (UYHE-) UNIV HELSINKI LICENSING LTD OY.
PA   (UYPI-) UNIV PITTSBURGH.
XX
PI   Ferrell RE, Alitalo K, Finegold DN, Karkkainen M;
XX
DR   WPI; 2000-679298/66.
DR   N-PSDB; AAC62406.
XX
PT   Screening a human subject for increased risk of developing a lymphatic
PT   disorder, comprises assaying a nucleic acid to determine a mutation
PT   altering the sequence of a vascular endothelial growth factor
PT   receptor-3 -
XX
PS   Disclosure; Page 60-61; 76pp; English.
XX
CC   The present sequence is the protein sequence for the human vascular
CC   endothelial growth factor C (VEGF-C). It was used to demonstrate the
CC   methods of the invention, which involve the screening of individuals to
CC   determine which vascular endothelial growth factor receptor 3 (VEGFR-3,
CC   also known as Flt4 or fms-like tyrosine kinase 4) alleles they possess
CC   and thus their likelihood of developing hereditary lymphoedema.
CC   Conditions associated with lymphoedema include Milroy-Nonne syndrome,
CC   which is early onset lymphoedema and lymphoedema praecox, which is late
CC   onset.
XX
SQ   Sequence   419 AA;
```

```
  Query Match             97.9%;  Score 410;  DB 21;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches  410;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       4 LGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQLRSV 63
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       4 lgffsvacsllaaallpgpreapaaaaafesgldlsdaepdageatayaskdleeqlrsv 63

Qy      64 SSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSID 123
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      64 ssvdelmtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilksid 123
```

```
Qy    124 NEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSK 183
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    124 newrktqcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsylsk 183

Qy    184 TLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTC 243
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    184 tlfeitvplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaanktc 243

Qy    244 PTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPAS 303
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    244 ptnymwnnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcraglrpas 303

Qy    304 CGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECT 363
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    304 cgphkeldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcacect 363

Qy    364 ESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYW 413
          |||||||||||||||||||||||||||||||||||||||||||||||||||
Db    364 espqkcllkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsyw 413
```

RESULT 11
AAY70749
ID AAY70749 standard; Protein; 419 AA.
XX
AC AAY70749;
XX
DT 17-AUG-2000 (first entry)
XX
DE Human prepro-vascular endothelial growth factor C.
XX
KW Human; receptor tyrosine kinase; RTK; Flt4; fms-like tyrosine kinase 4;
KW VEGFR-3; vascular endothelial growth factor receptor-3; chromosome 5q35;
KW cytostatic; tumour imaging; anti-tumour therapy; treatment; diagnosis;
KW neoplastic disease; lymphoma; carcinoma; breast; squamous cell; melanoma;
KW sarcoma; malignancy; VEGF-C; vascular endothelial growth factor C.
XX
OS Homo sapiens.
XX

FH	Key	Location/Qualifiers
FT	Peptide	1..31
FT		/label= Signal_peptide
FT	Peptide	32..103
FT		/label= N-terminal_peptide
FT		/note= "cleavage of this peptide from partially processed
FT		VEGF-C produces a fully processed mature form of VEGF-C
FT		of 21-23 kD which has high affinity to VEGFR-2"
FT	Protein	104..227
FT		/label= Mature_VEGF-C
FT	Peptide	228..419
FT		/label= C-terminal_peptide
FT		/note= "Has a pattern of spaced cysteine residues
FT		reminiscent of a Balbiani ring 3 protein (BR3P) sequence;
FT		cleavage of signal peptide and the C-terminal
FT		peptide produces a partially processed form of VEGF-C of
FT		about 29 kD which has high affinity to Flt4 (VEGFR-3)"
FT	Binding-site	113..213
FT		/note= "binds and stimulates VEGF-C receptors; Cys
FT		at position 156 is essential for VEGFR-2 binding and at
FT		165 is essential for VEGFR-2 and VEGFR-3 binding"
FT	Region	131..211
FT		/note= "important for VEGF-C activity"

XX
PN WO200021560-A1.
XX
PD 20-APR-2000.
XX
PF 08-OCT-1999; 99WO-US23525.
XX
PR 09-OCT-1998; 98US-0169079.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (UYHE-) UNIV HELSINKI LICENSING LTD OY.
XX
PI Alitalo K, Kaipainen A, Valltola R, Jussila L;
XX
DR WPI; 2000-317850/27.
XX
PT Treating neoplastic diseases such as lymphoma, carcinomas, melanomas
PT and sarcomas, involves administering a compound capable of inhibiting
PT binding of ligand proteins to fms-like tyrosine kinase-4 receptor -
XX
PS Example 15-17; Page 140-142; 148pp; English.
XX
CC The patent discloses a method to treat neoplastic disease characterised
CC by expression of fms-like tyrosine kinase 4 (Flt4) receptor (also
CC referred as vascular endothelial growth factor receptor-3, VEGFR-3) in
CC endothelial cells of blood vessels adjacent to malignant neoplasm. The
CC method involves administering a compound that inhibits binding of a
CC ligand to Flt4 thereby inhibiting Flt4 mediated proliferation of vascular
CC endothelial cells. The compound is useful for treating neoplastic disease
CC such as breast carcinomas, squamous cell carcinomas, lymphomas, melanomas
CC and sarcomas. Flt4 receptor tyrosine kinase binding compounds can be used
CC for manufacturing medicament useful for diagnostic screening, imaging and
CC treatment of malignancies characterised by Flt4-expressing blood cells.
CC The Flt4 gene maps to chromosomal region 5q35 and is expressed as 5.8 kb
CC and 4.5 kb mRNAs which differ in their 3' sequences and are
CC differentially expressed in HEL and DAMI cell lines. Flt4
CC belongs to a subfamily of class III receptor tyrosine kinases (RTKs).
CC It is used as a target for tumour imaging and anti-tumour therapy.
CC The present sequence is a human prepro-vascular endothelial growth
CC factor C (VEGF-C), a specific example of Flt4 binding compound.
XX
SQ Sequence 419 AA;

Query Match 97.9%; Score 410; DB 21; Length 419;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 410; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy      4 LGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQLRSV 63
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      4 lgffsvacsllaaallpgpreapaaaaafesgldlsdaepdageatayaskdleeqlrsv 63

Qy     64 SSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSID 123
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     64 ssvdelmtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilksid 123

Qy    124 NEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSK 183
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    124 newrktqcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsylsk 183

Qy    184 TLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTC 243
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    184 tlfeitvplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaanktc 243

Qy    244 PTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPAS 303
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    244 ptnymwnnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcraglrpas 303

Qy    304 CGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECT 363
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    304 cgphkeldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcacect 363

Qy    364 ESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYW 413
          |||||||||||||||||||||||||||||||||||||||||||||||||||
Db    364 espqkcllkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsyw 413
```

RESULT 12
AAY70982
ID AAY70982 standard; Protein; 419 AA.
XX
AC AAY70982;
XX

```
DT   09-AUG-2000  (first entry)
XX
DE   Human vascular endothelial growth factor (VEGF)-C protein.
XX
KW   Vascular endothelial growth factor-C; VEGF; human; re-endothelialisation;
KW   vascular endothelial growth factor receptor; VEGFR; vascular trauma;
KW   blood vessel; cardiovascular surgery; anti-restenosis agent; prevention;
KW   restenosis; stenosis; percutaneous transluminal coronary angioplasty.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Peptide         1..31
FT                   /label= Signal_peptide
FT                   /note= "Cleavage results in partially-processed VEGF-C
FT                   protein (29 kD)"
FT   Peptide         32..103
FT                   /label= Amino_terminal_peptide
FT                   /note= "Cleavage results in fully-processed mature
FT                   VEGF-C protein (21-23 kD)"
FT   Protein         104..227
FT                   /label= Mature_human_VEGF_C
FT                   /note= "Processed vascular epithelial growth factor-C"
FT   Binding-site    83
FT                   /note= "Essential for VEGFR-2 and VEGFR-3 binding"
FT   Active-site     131..211
FT                   /note= "Essential for biological activity of protein"
FT   Binding-site    137
FT                   /note= "Essential for VEGFR-2 and VEGFR-3 binding"
FT   Binding-site    156
FT                   /note= "Essential for VEGFR-2 binding"
FT   Binding-site    165
FT                   /note= "Essential for VEGFR-2 and VEGFR-3 binding"
FT   Peptide         228..419
FT                   /label= Carboxy_terminal_peptide
FT                   /note= "Cleavage results in partially-processed VEGF-C
FT                   protein (29 kD)"
XX
PN   WO200024412-A2.
XX
PD   04-MAY-2000.
XX
PF   26-OCT-1999;   99WO-US24054.
XX
PR   26-OCT-1998;   98US-0105587.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
PA   (UYHE-) UNIV HELSINKI LICENSING LTD OY.
PA   (YLAH/) YLA-HERTTUALA S.
XX
PI   Yla-herttuala S,  Alitalo K,  Hiltunen MO,  Jeltsch MM,  Achen MG;
XX
DR   WPI; 2000-350584/30.
DR   N-PSDB; AAD00339, AAD00353.
XX
PT   Preventing stenosis and restenosis in mammals using vascular
PT   endothelial growth factor proteins or the nucleic acids encoding them -
XX
PS   Claim 5; Page 51-53; 61pp; English.
XX
CC   The present amino acid sequence is the complete human prepro-vascular
CC   endothelial growth factor (VEGF)-C. VEGF-C has the ability to stimulate
CC   re-endothelialisation of an injured blood vessel, without significant
CC   stimulation of smooth muscle cell proliferation. It can bind to and
CC   stimulate VEGFR-2 (vascular endothelial growth factor receptor) and/or
CC   VEGFR-3 phosphorylation in cells that express such receptors. An
CC   anti-restenosis agent comprising either a VEGF-C gene or protein is
CC   used in a method to reduce or prevent restenosis and stenosis of a blood
CC   vessel following vascular trauma e.g., cardiovascular surgery and
CC   percutaneous transluminal coronary angioplasty.
XX
SQ   Sequence   419 AA;
```

```
  Query Match             97.9%;  Score 410;  DB 21;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches  410;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       4 LGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQLRSV 63
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       4 lgffsvacsllaaallpgpreapaaaaafesgldlsdaepdageatayaskdleeqlrsv 63

Qy      64 SSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSID 123
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      64 ssvdelmtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilksid 123

Qy     124 NEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSK 183
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     124 newrktqcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsylsk 183

Qy     184 TLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTC 243
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     184 tlfeitvplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaanktc 243

Qy     244 PTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPAS 303
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     244 ptnymwnnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcraglrpas 303

Qy     304 CGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECT 363
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     304 cgphkeldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcacect 363

Qy     364 ESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYW 413
          |||||||||||||||||||||||||||||||||||||||||||||||||||
Db     364 espqkcllkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsyw 413
```

```
RESULT  13
AAB37605
ID   AAB37605 standard; Protein; 419 AA.
XX
AC   AAB37605;
XX
DT   27-FEB-2001  (first entry)
XX
DE   Human VEGF-C.
XX
KW   Human; gene therapy; lymphatic disorder; hereditary lymphedoema; Flt4;
KW   vascular endothelial growth factor receptor-3; VEGFR-3; VEGF-C; VEGF-D;
KW   fms-like tyrosine kinase 4.
XX
OS   Homo sapiens.
XX
PN   CA2283470-A1.
XX
PD   26-SEP-2000.
XX
PF   29-SEP-1999;   99CA-2283470.
XX
PR   26-MAR-1999;   99WO-US06133.
PR   16-AUG-1999;   99US-0375248.
XX
PA   (UYPI-) UNIV PITTSBURGH.
PA   (UYHE-) UNIV HELSINKI LICENSING LTD OY.
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Alitalo K,  Ferrell RE,  Finegold DN,  Karkkainen M;
XX
DR   WPI; 2001-007762/02.
DR   N-PSDB; AAC68953.
XX
PT   Screening a human for an increased risk of developing lymphatic
PT   disorder comprises assaying nucleic acid for alterations in the
PT   sequences expressing vascular endothelial growth factor receptor-3  -
XX
PS   Disclosure; Pages 62-63; 99pp; English.
```

```
XX
CC   The present invention relates to a method for screening a human subject
CC   for an increased risk of developing a lymphatic disorder e.g. hereditary
CC   lymphedoema. The method comprises assaying nucleic acid of a human
CC   subject to determine a presence or an absence of a mutation altering the
CC   sequence or expression of vascular endothelial growth factor receptor-3
CC   (VEGFR-3)/fms-like tyrosine kinase 4 (Flt4) allele (see AAC68952 and
CC   AAB37604) and determining an increased risk of developing lymphatic
CC   disorder from presence or absence of the mutation. The presence of a
CC   mutation altering the encoded amino acid sequence or expression of at
CC   least 1 VEGFR-3 allele in the nucleic acid correlates with an increased
CC   risk of developing a lymphatic disorder. Treatment for hereditary
CC   lymphedoema can be provided through the administration of vascular
CC   endothelial growth factor C (VEGF-C) and vascular endothelial growth
CC   factor D VEGF-D genes (via gene therapy) and proteins. The present
CC   sequence is the protein sequence for VEGF-C.
XX
SQ   Sequence   419 AA;


  Query Match             97.9%;  Score 410;  DB 22;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches  410;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       4 LGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQLRSV 63
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       4 lgffsvacsllaaallpgpreapaaaaafesgldlsdaepdageatayaskdleeqlrsv 63

Qy      64 SSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSID 123
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      64 ssvdelmtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilksid 123

Qy     124 NEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSK 183
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     124 newrktqcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsylsk 183

Qy     184 TLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTC 243
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     184 tlfeitvplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaanktc 243

Qy     244 PTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPAS 303
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     244 ptnymwnnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcraglrpas 303

Qy     304 CGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECT 363
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     304 cgphkeldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcacect 363

Qy     364 ESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYW 413
           |||||||||||||||||||||||||||||||||||||||||||||||||||
Db     364 espqkcllkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsyw 413


RESULT  14
AAW86237
ID   AAW86237 standard; protein; 399 AA.
XX
AC   AAW86237;
XX
DT   16-FEB-1999  (first entry)
XX
DE   Human VEGF-C full length sequence.
XX
KW   VEGF; VRP; vascular endothelial growth factor; VEGF-related protein;
KW   recombinant; truncated; gene therapy; angiogenesis; cardiac ischaemia;
KW   coronary; collateral vessel development; cell growth; migration; heart;
KW   lower limb ischaemia; stroke; peripheral vascular disease; intestine;
KW   wound healing; skin; vascular permeability.
XX
OS   Homo sapiens.
XX
PN   WO9849300-A2.
XX
PD   05-NOV-1998.
XX
PF   20-APR-1998;   98WO-US07801.
XX
PR   25-APR-1997;   97US-0842984.
XX
PA   (COLL-) COLLATERAL THERAPEUTICS.
XX
PI   Bohlen P;
XX
DR   WPI; 1999-009426/01.
XX
PT   New truncated vascular endothelial growth factor-related protein
PT   subunits - lack part of the N-terminal sequence, used to stimulate
PT   angiogenesis, e.g. for treating heart disease and ischaemia
XX
PS   Claim 5; Fig 2D; 113pp; English.
XX
CC   The invention relates to truncated VRP (vascular endothelial growth
CC   factor (VEGF)-related protein) subunits that have at least one amino
CC   acid N-terminal to the first Cys of the core sequence deleted. Host
CC   cells transformed or transfected with expression vectors containing
CC   nucleic acids encoding the truncated VRP subunits are used to produce
CC   the truncated proteins recombinantly. The truncated VRP subunits,
CC   optionally expressed from gene therapy vectors, have in vivo and in vitro
CC   angiogenic activity and are used to stimulate angiogenesis, particularly
CC   coronary collateral vessel development in cases of cardiac ischaemia; to
CC   stimulate endothelial cell growth and migration in vitro; to treat heart
CC   disease; to treat ischaemia (e.g.cardiac, chronic coronary or chronic
CC   lower limb ischaemia; stroke and peripheral vascular disease); to promote
CC   healing of wounds (of skin or intestines), and to increase vascular
CC   permeability. Sequences AAW86234 to AAW86239 represent full length VRP
CC   sequences from which the truncated fragments are created.
XX
SQ   Sequence   399 AA;


  Query Match             93.8%;  Score 393;  DB 20;  Length 399;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches  393;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      21 GPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQLRSVSSVDELMTVLYPEYWKM 80
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1 gpreapaaaaafesgldlsdaepdageatayaskdleeqlrsvssvdelmtvlypeywkm 60

Qy      81 YKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDV 140
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      61 ykcqlrkggwqhnreqanlnsrteetikfaaahynteilksidnewrktqcmprevcidv 120

Qy     141 GKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVT 200
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     121 gkefgvatntffkppcvsvyrcggccnseglqcmntstsylsktlfeitvplsqgpkpvt 180

Qy     201 ISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMWNNHICRCLAQE 260
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     181 isfanhtscrcmskldvyrqvhsiirrslpatlpqcqaanktcptnymwnnhicrclaqe 240

Qy     261 DFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKELDRNSCQCVCK 320
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     241 dfmfssdagddstdgfhdicgpnkeldeetcqcvcraglrpascgphkeldrnscqcvck 300

Qy     321 NKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECTESPQKCLLKGKKFHHQT 380
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     301 nklfpsqcganrefdentcqcvckrtcprnqplnpgkcacectespqkcllkgkkfhhqt 360

Qy     381 CSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYW 413
           |||||||||||||||||||||||||||||||||
Db     361 cscyrrpctnrqkacepgfsyseevcrcvpsyw 393


RESULT  15
AAY30519
ID   AAY30519 standard; Protein; 350 AA.
```

```
XX
AC   AAY30519;
XX
DT   16-NOV-1999  (first entry)
XX
DE   A truncated vascular endothelial growth factor-2.
XX
KW   Human vascular endothelial growth factor-2; VEGF-2;
KW   vascular endothelial cell growth; endothelial cell migration;
KW   angiogenesis; blood pressure; blood flow; immune system disorder;
KW   immune cell; cancer; autoimmune disorder; blood protein disorder;
KW   ataxia telangiectasia; common variable immunodeficiency;
KW   Digeorge syndrome; HIV infection; HTLV-BLV infection;
KW   leukocyte adhesion deficiency syndrome; lymphopenia;
KW   phagocyte bactericidal dysfunction; severe combined immunodeficiency;
KW   Wiskott-Aldrich disorder; anemia; thrombocytopenia; hemoglobinuria;
KW   allergy; asthma; allergic asthma.
XX
OS   Homo sapiens.
XX
PN   WO9946364-A1.
XX
PD   16-SEP-1999.
XX
PF   10-MAR-1999;   99WO-US05021.
XX
PR   13-MAR-1998;   98US-0042105.
PR   30-JUN-1998;   98US-0107997.
XX
PA   (HUMA-) HUMAN GENOME SCI INC.
XX
PI   Rosen CA,  Cao L,  Hu J;
XX
DR   WPI; 1999-551399/46.
DR   N-PSDB; AAZ10524.
XX
PT   New human vascular endothelial growth factor-2, used for treating, e.g.
PT   immune disorders and cancers  -
XX
PS   Example 2; Fig 2A-D; 222pp; English.
XX
CC   The present sequence represents a truncated, biologically active form
CC   of human vascular endothelial growth factor-2 (VEGF-2). The VEGF-2
CC   polypeptides have activities similar to VEGF. The VEGF-2 polypeptides
CC   stimulate the growth of vascular endothelial cells, stimulate endothelial
CC   cell migration, stimulate angiogenesis, decrease blood pressure, and
CC   increase blood flow. The polynucleotides and polypeptides can be used
CC   for preventing, treating or ameliorating a medical condition. The
CC   VEGF-2 polypeptides or polynucleotides may be useful in treating
CC   deficiencies or disorders of the immune system, by activating or
CC   inhibiting the proliferation, differentiation, or mobilization
CC   (chemotaxis) of immune cells. The etiology of these immune deficiencies
CC   or disorders may be genetic, somatic, such as cancer or some autoimmune
CC   disorders, acquired (e.g. by chemotherapy or toxins), or infectious.
CC   Examples of immunologic deficiency syndromes include blood protein
CC   disorders, ataxia telangiectasia, common variable immunodeficiency,
CC   Digeorge syndrome, HIV infection, HTLV-BLV infection, leukocyte adhesion
CC   deficiency syndrome, lymphopenia, phagocyte bactericidal dysfunction,
CC   severe combined immunodeficiency (SCIDs), Wiskott-Aldrich disorder,
CC   anemia, thrombocytopenia, or hemoglobinuria. They can also be used to
CC   modulate emostatic or thrombolytic activity. Similarly allergic reactions
CC   and conditions such as asthma (particularly allergic asthma) or other
CC   respiratory problems, may also be treated.
XX
SQ   Sequence   350 AA;


  Query Match           83.5%;  Score 350;  DB 20;  Length 350;
  Best Local Similarity  100.0%;  Pred. No. 0;
  Matches  350;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy     70 MTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKT 129
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

Db      1 mtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilksidnewrkt 60

Qy    130 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 189
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

Db     61 qcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsylsktlfeit 120

Qy    190 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMW 249
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

Db    121 vplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaanktcptnymw 180

Qy    250 NNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE 309
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

Db    181 nnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcraglrpascgphke 240

Qy    310 LDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECTESPQKC 369
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

Db    241 ldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcacectespqkc 300

Qy    370 LLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWQRPQMS 419
          |||||||||||||||||||||||||||||||||||||||||||||||||||
Db    301 llkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsywqrpqms 350


Search completed: November 15, 2001, 10:07:12
Job time: 44 sec
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GenCore version 4.5

OM protein - protein search, using sw model

Run on: November 15, 2001, 10:06:28 ; Search time 25.79 Seconds
(without alignments)
1237.578 Million cell updates/sec

Title: US-09-257-272-2
Perfect score: 419
Sequence: 1 MHSLGFFSVACSLLAAALLP.....SYSEEVCRCVPSYWQRPQMS 419

Scoring table: OLIGO
Gapop 60.0 , Gapext 60.0

Searched: 219241 seqs, 76174552 residues

Word size : 30

Total number of hits satisfying chosen parameters: 1

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Listing first 45 summaries

Database : PIR_68:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	410	97.9	419	2	S69207	vascular endotheli

ALIGNMENTS

RESULT 1
S69207
vascular endothelial growth factor C precursor - human
N;Alternate names: FLT4 ligand DHM
C;Species: Homo sapiens (man)
C;Date: 27-Apr-1996 #sequence_revision 01-Nov-1996 #text_change 08-Oct-1999
C;Accession: S69207; S61795; S71443; S69208; G02659
R;Joukov, V.; Pajusola, K.; Kaipainen, A.; Chilov, D.; Lahtinen, I.; Kukk, E.; Saksela,
EMBO J. 15, 1751, 1996
A;Title: Corrigendum: A novel vascular endothelial growth factor, VEGF-C, is a ligand fc
A;Reference number: S69207; MUID:96203094
A;Accession: S69207
A;Status: nucleic acid sequence not shown
A;Molecule type: mRNA
A;Residues: 1-419 <JOU>
A;Cross-references: EMBL:X94216; NID:g1177488; PIDN:CAA63907.1; PID:e221096; PID:g118200
A;Note: the nucleotide sequence was submitted to the EMBL Data Library, December 1995
A;Note: only a part of the translation is shown
A;Note: this is a revision to the sequence from reference S61795
R;Joukov, V.; Pajusola, K.; Kaipainen, A.; Chilov, D.; Lahtinen, I.; Kukk, E.; Saksela,
EMBO J. 15, 290-298, 1996
A;Title: A novel vascular endothelial growth factor, VEGF-C, is a ligand for the Flt4 (V
A;Reference number: S61795; MUID:96178224
A;Accession: S61795
A;Status: nucleic acid sequence not shown; not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 70-419 <JOU1>
A;Note: this sequence has been revised in reference S69207
A;Accession: S71443
A;Molecule type: protein
A;Residues: 'X',104-120 <JOU2>
R;Lee, J.; Gray, A.; Yuan, J.; Luoh, S.M.; Avraham, H.; Wood, W.I.
submitted to the EMBL Data Library, December 1995
A;Description: Vascular endothelial growth factor related protein (VRP): A ligand and
A;Reference number: S69208
A;Accession: S69208
A;Molecule type: mRNA
A;Residues: 1-419 <LEE>
A;Cross-references: EMBL:U43142; NID:g1150988; PIDN:AAA85214.1; PID:g1150989
R;Morris, J.C.
submitted to the EMBL Data Library, May 1996
A;Reference number: H01557
A;Accession: G02659
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-419 <MOR>
A;Cross-references: EMBL:U58111; NID:g1373426; PIDN:AAB02909.1; PID:g1373427
C;Genetics:
A;Gene: GDB:VEGFC; VRP
A;Cross-references: GDB:3890883; OMIM:601528
F;1-12/Domain: signal sequence #status predicted <SIG>
F;13-102/Domain: propeptide #status predicted <PRO>
F;103-419/Product: vascular endothelial growth factor C #status experimental <MAT>

Query Match 97.9%; Score 410; DB 2; Length 419;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 410; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy       4 LGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQLRSV 63
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       4 LGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQLRSV 63

Qy      64 SSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSID 123
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      64 SSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSID 123

Qy     124 NEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSK 183
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     124 NEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSK 183

Qy     184 TLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTC 243
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     184 TLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTC 243

Qy     244 PTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPAS 303
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     244 PTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPAS 303

Qy     304 CGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECT 363
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     304 CGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECT 363

Qy     364 ESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYW 413
          |||||||||||||||||||||||||||||||||||||||||||||||||||
Db     364 ESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYW 413
```

Search completed: November 15, 2001, 10:07:43
Job time: 75 sec

GenCore version 4.5

OM protein - protein search, using sw model

Run on: November 15, 2001, 10:06:28 ; Search time 16.77 Seconds
(without alignments)
855.876 Million cell updates/sec

Title: US-09-257-272-2
Perfect score: 419
Sequence: 1 MHSLGFFSVACSLLAAALLP.....SYSEEVCRCVPSYWQRPQMS 419

Scoring table: OLIGO
Gapop 60.0 , Gapext 60.0

Searched: 93435 seqs, 34255486 residues

Word size : 30

Total number of hits satisfying chosen parameters: 2

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Listing first 45 summaries

Database : SwissProt_39:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	410	97.9	419	1	VEGC_HUMAN	P49767 homo sapien
2	68	16.2	415	1	VEGC_MOUSE	P97953 mus musculu

ALIGNMENTS

RESULT 1
VEGC_HUMAN
ID VEGC_HUMAN STANDARD; PRT; 419 AA.
AC P49767;
DT 01-OCT-1996 (Rel. 34, Created)
DT 01-OCT-1996 (Rel. 34, Last sequence update)
DT 01-OCT-2000 (Rel. 40, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR C PRECURSOR (VEGF-C) (VASCULAR
DE ENDOTHELIAL GROWTH FACTOR RELATED PROTEIN) (VRP) (FLT4 LIGAND) (FLT4-
DE L).
GN VEGFC.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A., AND SEQUENCE OF 103-120.
RX MEDLINE=96178224; PubMed=8617204;
RA Joukov V., Pajusola K., Kaipainen A., Chilov D., Lahtinen I., Kukk E.,
RA Saksela O., Kalkkinen N., Alitalo K.;
RT "A novel vascular endothelial growth factor, VEGF-C, is a ligand for
RT the Flt4 (VEGFR-3) and KDR (VEGFR-2) receptor tyrosine kinases.";
RL EMBO J. 15:290-298(1996).
RN [2]
RP ERRATUM.
RX MEDLINE=96203094; PubMed=8612600;
RA Joukov V., Pajusola K., Kaipainen A., Chilov D., Lahtinen I., Kukk E.,
RA Saksela O., Kalkkinen N., Alitalo K.;
RL EMBO J. 15:1751-1751(1996).
RN [3]
RP SEQUENCE FROM N.A.
RX MEDLINE=96312526; PubMed=8700872;
RA Lee J., Gray A., Yuan J., Luoh S.-M., Avraham H., Wood W.I.;
RT "Vascular endothelial growth factor-related protein: a ligand and
RT specific activator of the tyrosine kinase receptor Flt4.";
RL Proc. Natl. Acad. Sci. U.S.A. 93:1988-1992(1996).
RN [4]
RP SEQUENCE FROM N.A.
RA Fitz L., Morris J.C., Towler P.S., Long A.J., Greco R.,
RA Burgess P., Giannotti J., Ciarletta A., Hennessey D., Kovacic S.,
RA Fitzgerald M., Scaltreto H., Weich N., Neben S., Finnerty H.,
RA Zollner R., Wang J., Nickbarg E., Gassaway R., Turner K.,
RA Wood C.R.;
RL Submitted (JUN-1996) to the EMBL/GenBank/DDBJ databases.
CC -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC CELL GROWTH.
CC -!- SUBUNIT: HOMODIMER, DISULFIDE-LINKED.
CC -!- PTM: PROBABLY PROTEOLITICALLY PROCESSED IN THE C-TERMINUS.
CC -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC ---

CC ---
DR EMBL; X94216; CAA63907.1; -.
DR EMBL; U43142; AAA85214.1; -.
DR EMBL; U58111; AAB02909.1; -.
DR HSSP; P15692; 1VPF.
DR MIM; 601528; -.
DR InterPro; IPR000072; -.
DR InterPro; IPR002400; -.
DR Pfam; PF00341; PDGF; 1.
DR PRINTS; PR00438; GFCYSKNOT.
DR PROSITE; PS00249; PDGF_1; 1.
DR PROSITE; PS50278; PDGF_2; 1.
KW Mitogen; Growth factor; Glycoprotein; Signal; Repeat.
FT SIGNAL 1 ? POTENTIAL.
FT PROPEP ? 102 POTENTIAL.
FT CHAIN 103 419 VASCULAR ENDOTHELIAL GROWTH FACTOR C.
FT DOMAIN 275 365 4 X 24 AA TANDEM REPEATS.
FT REPEAT 275 298 1.
FT REPEAT 299 322 2.
FT REPEAT 323 346 3.
FT REPEAT 347 365 4 (PARTIAL).
FT CARBOHYD 175 175 N-LINKED (GLCNAC. . .) (POTENTIAL).
FT CARBOHYD 205 205 N-LINKED (GLCNAC. . .) (POTENTIAL).
FT CARBOHYD 240 240 N-LINKED (GLCNAC. . .) (POTENTIAL).
SQ SEQUENCE 419 AA; 46883 MW; 9F598719DB3E014F CRC64;

Query Match 97.9%; Score 410; DB 1; Length 419;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 410; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy       4 LGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQLRSV 63
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       4 LGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQLRSV 63

Qy      64 SSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSID 123
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      64 SSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSID 123

Qy     124 NEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSK 183
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     124 NEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSK 183
```

```
Qy    184 TLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTC 243
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    184 TLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTC 243

Qy    244 PTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPAS 303
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    244 PTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPAS 303

Qy    304 CGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECT 363
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    304 CGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECT 363

Qy    364 ESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYW 413
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db    364 ESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYW 413


RESULT  2
VEGC_MOUSE
ID   VEGC_MOUSE     STANDARD;      PRT;   415 AA.
AC   P97953;
DT   15-JUL-1998 (Rel. 36, Created)
DT   15-JUL-1998 (Rel. 36, Last sequence update)
DT   30-MAY-2000 (Rel. 39, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR C PRECURSOR (VEGF-C) (FLT4 LIGAND)
DE   (FLT4-L).
GN   VEGFC.
OS   Mus musculus (Mouse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX   NCBI_TaxID=10090;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN=BALB/C;
RX   MEDLINE=97164697; PubMed=9012504;
RA   Kukk E., Lymboussaki A., Taira S., Kaipainen A., Jeltsch M.,
RA   Joukov V., Alitalo K.;
RT   "VEGF-C receptor binding and pattern of expression with VEGFR-3
RT   suggests a role in lymphatic vascular development.";
RL   Development 122:3829-3837(1996).
RN   [2]
RP   SEQUENCE FROM N.A.
RC   STRAIN=BALB/C;
RX   MEDLINE=97388482; PubMed=9247316;
RA   Fitz L.J., Morris J.C., Towler P., Long A., Burgess P., Greco R.,
RA   Wang J., Gassaway R., Nickbarg E., Kovacic S., Ciarletta A.,
RA   Giannotti J., Finnerty H., Zollner R., Beier D.R., Leak L.V.,
RA   Turner K.J., Wood C.R.;
RT   "Characterization of murine Flt4 ligand/VEGF-C.";
RL   Oncogene 15:613-618(1997).
CC   -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC       CELL GROWTH.
CC   -!- SUBUNIT: HOMODIMER, DISULFIDE-LINKED (BY SIMILARITY).
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; U73620; AAC52984.1; -.
DR   EMBL; U58112; AAB46707.1; -.
DR   HSSP; P15692; 1VPF.
DR   MGD; MGI:109124; Vegfc.
DR   InterPro; IPR000072; -.
DR   InterPro; IPR002400; -.
DR   Pfam; PF00341; PDGF; 1.
DR   PRINTS; PR00438; GFCYSKNOT.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Signal; Repeat.
FT   SIGNAL       1      ?       POTENTIAL.
FT   PROPEP       ?     98       POTENTIAL.
FT   CHAIN       99    415       VASCULAR ENDOTHELIAL GROWTH FACTOR C.
FT   DOMAIN      271    361       4 X 24 AA TANDEM REPEATS.
FT   REPEAT      271    294       1.
FT   REPEAT      295    318       2.
FT   REPEAT      319    342       3.
FT   REPEAT      343    361       4 (PARTIAL).
FT   CARBOHYD    171    171       N-LINKED (GLCNAC. . .) (POTENTIAL).
FT   CARBOHYD    201    201       N-LINKED (GLCNAC. . .) (POTENTIAL).
FT   CARBOHYD    236    236       N-LINKED (GLCNAC. . .) (POTENTIAL).
SQ   SEQUENCE   415 AA;  46471 MW;  D9D3DD3CECC659D6 CRC64;


  Query Match             16.2%;  Score 68;  DB 1;  Length 415;
  Best Local Similarity   100.0%;  Pred. No. 2.1e-59;
  Matches   68;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy    180 YLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAA 239
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    176 YLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAA 235

Qy    240 NKTCPTNY 247
          ||||||||
Db    236 NKTCPTNY 243


Search completed: November 15, 2001, 10:08:54
Job time: 146 sec
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GenCore version 4.5

OM protein - protein search, using sw model

Run on: November 15, 2001, 10:06:28 ; Search time 40.97 Seconds
(without alignments)
1353.083 Million cell updates/sec

Title: US-09-257-272-2
Perfect score: 419
Sequence: 1 MHSLGFFSVACSLLAAALLP.....SYSEEVCRCVPSYWQRPQMS 419

Scoring table: OLIGO
Gapop 60.0 , Gapext 60.0

Searched: 425026 seqs, 132305027 residues

Word size : 30

Total number of hits satisfying chosen parameters: 3

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Listing first 45 summaries

Database : SPTREMBL_16:*
1: sp_archea:*
2: sp_bacteria:*
3: sp_fungi:*
4: sp_human:*
5: sp_invertebrate:*
6: sp_mammal:*
7: sp_mhc:*
8: sp_organelle:*
9: sp_phage:*
10: sp_plant:*
11: sp_rodent:*
12: sp_unclassified:*
13: sp_vertebrate:*
14: sp_virus:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	65	15.5	126	11	O35757	O35757 rattus norv
2	60	14.3	420	6	Q9XS50	Q9xs50 bos taurus
3	31	7.4	418	13	O57352	O57352 coturnix co

ALIGNMENTS

RESULT 1
O35757
ID O35757 PRELIMINARY; PRT; 126 AA.
AC O35757;
DT 01-JAN-1998 (TrEMBLrel. 05, Created)
DT 01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
DT 01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR-C (FRAGMENT).
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX NCBI_TaxID=10116;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=SPRAGUE-DAWLEY; TISSUE=LUNG;
RA Mandriota S.J., Pepper M.S.;
RL Submitted (JUN-1997) to the EMBL/GenBank/DDBJ databases.
DR EMBL; AF010302; AAB63248.1; -.
DR HSSP; P15692; 2VPF.
DR InterPro; IPR000072; -.
DR Pfam; PF00341; PDGF; 1.
DR PROSITE; PS50278; PDGF_2; 1.
DR SMART; SM00141; PDGF; 1.
FT NON_TER 1 1
FT NON_TER 126 126
SQ SEQUENCE 126 AA; 13977 MW; 8F365AFBC4E037B0 CRC64;

Query Match 15.5%; Score 65; DB 11; Length 126;
Best Local Similarity 100.0%; Pred. No. 4.9e-57;
Matches 65; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 180 YLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAA 239
||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 24 YLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAA 83

Qy 240 NKTCP 244
|||||
Db 84 NKTCP 88

RESULT 2
Q9XS50
ID Q9XS50 PRELIMINARY; PRT; 420 AA.
AC Q9XS50;
DT 01-NOV-1999 (TrEMBLrel. 12, Created)
DT 01-NOV-1999 (TrEMBLrel. 12, Last sequence update)
DT 01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR C PRECURSOR.
OS Bos taurus (Bovine).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
OC Bovidae; Bovinae; Bos.
OX NCBI_TaxID=9913;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=HEART;
RA Liu X., Yonekura H., Yamagishi S., Yamamoto Y., Yamamoto H.;
RT "Structure and expression of bovine VEGF family.";
RL Submitted (MAY-1997) to the EMBL/GenBank/DDBJ databases.
DR EMBL; AB004275; BAA77687.1; -.
DR HSSP; P15692; 1VPP.
DR InterPro; IPR000072; -.
DR Pfam; PF00341; PDGF; 1.
DR PROSITE; PS00249; PDGF_1; 1.
DR PROSITE; PS50278; PDGF_2; 1.
DR SMART; SM00141; PDGF; 1.
KW Signal.
FT SIGNAL 1 20 POTENTIAL.
FT CHAIN 21 420 VASCULAR ENDOTHELIAL GROWTH FACTOR C.
SQ SEQUENCE 420 AA; 46681 MW; 58BA84317A3C8E2D CRC64;

Query Match 14.3%; Score 60; DB 6; Length 420;
Best Local Similarity 100.0%; Pred. No. 1.4e-51;
Matches 60; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 172 QCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPA 231
||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 173 QCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPA 232

RESULT 3
O57352

```
ID   O57352      PRELIMINARY;      PRT;   418 AA.
AC   O57352;
DT   01-JUN-1998 (TrEMBLrel. 06, Created)
DT   01-JUN-1998 (TrEMBLrel. 06, Last sequence update)
DT   01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR C PRECURSOR.
GN   VEGF-C.
OS   Coturnix coturnix japonica (Japanese quail).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
OC   Coturnix.
OX   NCBI_TaxID=93934;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=98167900; PubMed=9435294;
RA   Eichmann A., Corbel C., Jaffredo T., Breant V., Joukov V., Kumar V.,
RA   Alitalo K., Le Douarin N.M.;
RT   "Avian VEGF-C: cloning, embryonic expression pattern and stimulation
RT   of the differentiation of VEGFR2-expressing endothelial cell
RT   precursors.";
RL   Development 125:743-752(1998).
DR   EMBL; Y15837; CAA75799.1; -.
DR   HSSP; P15692; 1VPP.
DR   InterPro; IPR000072; -.
DR   InterPro; IPR002400; -.
DR   Pfam; PF00341; PDGF; 1.
DR   PRINTS; PR00438; GFCYSKNOT.
DR   ProDom; PD001629; -; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
DR   SMART; SM00141; PDGF; 1.
KW   Signal.
FT   SIGNAL        1     31       POTENTIAL.
FT   CHAIN       111    418       VASCULAR ENDOTHELIAL GROWTH FACTOR C.
SQ   SEQUENCE   418 AA;  46839 MW;  099BFCC79151BF2B CRC64;


  Query Match             7.4%;  Score 31;  DB 13;  Length 418;
  Best Local Similarity   100.0%;  Pred. No. 1.6e-22;
  Matches   31;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy     202 SFANHTSCRCMSKLDVYRQVHSIIRRSLPAT 232
           |||||||||||||||||||||||||||||||
Db     201 SFANHTSCRCMSKLDVYRQVHSIIRRSLPAT 231


Search completed: November 15, 2001, 10:08:31
Job time: 123 sec
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GenCore version 4.5

OM protein - protein search, using sw model

Run on: November 15, 2001, 10:07:12 ; Search time 34.67 Seconds
(without alignments)
612.010 Million cell updates/sec

Title: US-09-257-272-4
Perfect score: 350
Sequence: 1 MTVLYPEYWKMYKCQLRKGG.....SYSEEVCRCVPSYWQRPQMS 350

Scoring table: OLIGO
Gapop 60.0 , Gapext 60.0

Searched: 412676 seqs, 60623988 residues

Word size : 30

Total number of hits satisfying chosen parameters: 32

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Listing first 45 summaries

Database : A_Geneseq_0601:*
1: /SIDS8/gcgdata/geneseq/geneseqp/AA1980.DAT:*
2: /SIDS8/gcgdata/geneseq/geneseqp/AA1981.DAT:*
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13: /SIDS8/gcgdata/geneseq/geneseqp/AA1992.DAT:*
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17: /SIDS8/gcgdata/geneseq/geneseqp/AA1996.DAT:*
18: /SIDS8/gcgdata/geneseq/geneseqp/AA1997.DAT:*
19: /SIDS8/gcgdata/geneseq/geneseqp/AA1998.DAT:*
20: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
21: /SIDS8/gcgdata/geneseq/geneseqp/AA2000.DAT:*
22: /SIDS8/gcgdata/geneseq/geneseqp/AA2001.DAT:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	350	100.0	350	20	AAY30519	A truncated vascul
2	350	100.0	350	20	AAY22321	Truncated human VE
3	350	100.0	350	21	AAY97145	Truncated vascular
4	350	100.0	350	22	AAY97577	Human VEGF-2 prote
5	350	100.0	419	20	AAY30518	Vascular endotheli
6	350	100.0	419	20	AAY22320	Full length human
7	350	100.0	419	21	AAY97144	Vascular endotheli
8	350	100.0	419	22	AAY97570	Human VEGF-B prote
9	344	98.3	399	20	AAW86237	Human VEGF-C full
10	344	98.3	419	18	AAW17837	Human foetal liver
11	344	98.3	419	18	AAW00932	Human Flt4 recepto
12	344	98.3	419	19	AAW75740	Human vascular end
13	344	98.3	419	20	AAW86203	Human vascular end
14	344	98.3	419	21	AAB10648	Human VEGC protein
15	344	98.3	419	21	AAB29048	Human VEGF-C prote
16	344	98.3	419	21	AAY70749	Human prepro-vascu
17	344	98.3	419	21	AAY70982	Human vascular end
18	344	98.3	419	22	AAB37605	Human VEGF-C. Hom
19	312	89.1	318	20	AAY08284	Human growth facto
20	309	88.3	350	16	AAR82686	Vascular endotheli
21	301	86.0	307	20	AAW86222	Human VEGF-C trunc
22	299	85.4	419	18	AAW13833	Human vascular end
23	296	84.6	302	20	AAW86223	Human VEGF-C trunc
24	291	83.1	297	20	AAW86224	Human VEGF-C trunc
25	286	81.7	292	20	AAW86225	Human VEGF-C trunc
26	263	75.1	419	18	AAW11478	Human vascular end
27	257	73.4	419	19	AAW75751	Vascular endotheli
28	113	32.3	113	20	AAY08285	Human growth facto
29	68	19.4	415	18	AAW00933	Mouse Flt4 recepto
30	68	19.4	415	19	AAW75742	Mouse vascular end
31	31	8.9	418	18	AAW00934	Quail Flt4 recepto
32	31	8.9	418	19	AAW75743	Quail vascular end

ALIGNMENTS

RESULT 1
AAY30519
ID AAY30519 standard; Protein; 350 AA.
XX
AC AAY30519;
XX
DT 16-NOV-1999 (first entry)
XX
DE A truncated vascular endothelial growth factor-2.
XX
KW Human vascular endothelial growth factor-2; VEGF-2;
KW vascular endothelial cell growth; endothelial cell migration;
KW angiogenesis; blood pressure; blood flow; immune system disorder;
KW immune cell; cancer; autoimmune disorder; blood protein disorder;
KW ataxia telangiectasia; common variable immunodeficiency;
KW Digeorge syndrome; HIV infection; HTLV-BLV infection;
KW leukocyte adhesion deficiency syndrome; lymphopenia;
KW phagocyte bactericidal dysfunction; severe combined immunodeficiency;
KW Wiskott-Aldrich disorder; anemia; thrombocytopenia; hemoglobinuria;
KW allergy; asthma; allergic asthma.
XX
OS Homo sapiens.
XX
PN WO9946364-A1.
XX
PD 16-SEP-1999.
XX
PF 10-MAR-1999; 99WO-US05021.
XX
PR 13-MAR-1998; 98US-0042105.
PR 30-JUN-1998; 98US-0107997.
XX
PA (HUMA-) HUMAN GENOME SCI INC.
XX
PI Rosen CA, Cao L, Hu J;
XX
DR WPI; 1999-551399/46.
DR N-PSDB; AAZ10524.
XX
PT New human vascular endothelial growth factor-2, used for treating, e.g.
PT immune disorders and cancers -
XX
PS Example 2; Fig 2A-D; 222pp; English.
XX
CC The present sequence represents a truncated, biologically active form
CC of human vascular endothelial growth factor-2 (VEGF-2). The VEGF-2
CC polypeptides have activities similar to VEGF. The VEGF-2 polypeptides

```
CC   stimulate the growth of vascular endothelial cells, stimulate endothelial
CC   cell migration, stimulate angiogenesis, decrease blood pressure, and
CC   increase blood flow. The polynucleotides and polypeptides can be used
CC   for preventing, treating or ameliorating a medical condition. The
CC   VEGF-2 polypeptides or polynucleotides may be useful in treating
CC   deficiencies or disorders of the immune system, by activating or
CC   inhibiting the proliferation, differentiation, or mobilization
CC   (chemotaxis) of immune cells. The etiology of these immune deficiencies
CC   or disorders may be genetic, somatic, such as cancer or some autoimmune
CC   disorders, acquired (e.g. by chemotherapy or toxins), or infectious.
CC   Examples of immunologic deficiency syndromes include blood protein
CC   disorders, ataxia telangiectasia, common variable immunodeficiency,
CC   Digeorge syndrome, HIV infection, HTLV-BLV infection, leukocyte adhesion
CC   deficiency syndrome, lymphopenia, phagocyte bactericidal dysfunction,
CC   severe combined immunodeficiency (SCIDs), Wiskott-Aldrich disorder,
CC   anemia, thrombocytopenia, or hemoglobinuria. They can also be used to
CC   modulate emostatic or thrombolytic activity. Similarly allergic reactions
CC   and conditions such as asthma (particularly allergic asthma) or other
CC   respiratory problems, may also be treated.
XX
SQ   Sequence   350 AA;


  Query Match             100.0%;  Score 350;  DB 20;  Length 350;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches  350;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 MTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKT 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1 mtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilksidnewrkt 60

Qy      61 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      61 qcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsylsktlfeit 120

Qy     121 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMW 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     121 vplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaanktcptnymw 180

Qy     181 NNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE 240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     181 nnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcraglrpascgphke 240

Qy     241 LDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECTESPQKC 300
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     241 ldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcacectespqkc 300

Qy     301 LLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWQRPQMS 350
           ||||||||||||||||||||||||||||||||||||||||||||||||||
Db     301 llkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsywqrpqms 350


RESULT   2
AAY22321
ID   AAY22321 standard; Protein; 350 AA.
XX
AC   AAY22321;
XX
DT   22-SEP-1999  (first entry)
XX
DE   Truncated human VEGF2 protein sequence.
XX
KW   VEGF2; vascular endothelial growth factor 2; angiogenesis; bone damage;
KW   endothelial cell proliferation; tissue damage; therapy.
XX
OS   Homo sapiens.
XX
PN   US5932540-A.
XX
PD   03-AUG-1999.
XX
PF   24-DEC-1997;   97US-0999811.
XX
PR   24-DEC-1997;   97US-0999811.
PR   08-MAR-1994;   94US-0207550.
PR   06-JUN-1995;   95US-0465968.
XX
PA   (HUMA-) HUMAN GENOME SCI INC.
XX
PI   Cao L,  Hu J,  Rosen CA;
XX
DR   WPI; 1999-443606/37.
DR   N-PSDB; AAX84838.
XX
PT   Vascular endothelial growth factor 2 for wound healing and vascular
PT   repair
XX
PS   Claim 1; Fig 2; 49pp; English.
XX
CC   This sequence is the vascular endothelial growth factor 2 (VEGF2),
CC   of the invention. The isolated polypeptide is useful for stimulating
CC   angiogenesis, by promoting the proliferation of endothelial cells, for
CC   the treatment of a wound, or for the treatment of tissue or bone damage.
XX
SQ   Sequence   350 AA;


  Query Match             100.0%;  Score 350;  DB 20;  Length 350;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches  350;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 MTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKT 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1 mtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilksidnewrkt 60

Qy      61 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      61 qcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsylsktlfeit 120

Qy     121 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMW 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     121 vplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaanktcptnymw 180

Qy     181 NNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE 240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     181 nnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcraglrpascgphke 240

Qy     241 LDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECTESPQKC 300
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     241 ldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcacectespqkc 300

Qy     301 LLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWQRPQMS 350
           ||||||||||||||||||||||||||||||||||||||||||||||||||
Db     301 llkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsywqrpqms 350


RESULT   3
AAY97145
ID   AAY97145 standard; Protein; 350 AA.
XX
AC   AAY97145;
XX
DT   22-DEC-2000  (first entry)
XX
DE   Truncated vascular endothelial growth factor-2 (VEGF-2).
XX
KW   Vascular endothelial growth factor 2; VEGF-2; retina; angiogenesis;
KW   treatment; injury; degeneration; photoreceptors; eye;
KW   angioid streaks; retinitis; pigmentosa; human;
KW   age-related macular degeneration; diabetic retinopathy.
XX
OS   Homo sapiens.
XX
PN   WO200045835-A1.
XX
PD   10-AUG-2000.
```

```
XX
PF   07-FEB-2000; 2000WO-US03047.
XX
PR   08-FEB-1999;   99US-0119179.
PR   12-FEB-1999;   99US-0119926.
PR   03-JUN-1999;   99US-0137796.
PR   22-DEC-1999;   99US-0171505.
XX
PA   (HUMA-) HUMAN GENOME SCI INC.
XX
PI   Rosen CA,  Alderson R,  Melder R,  Roschke V,  Ruben SM;
XX
DR   WPI; 2000-532862/48.
DR   N-PSDB; AAA52081.
XX
PT   Treating injury or degeneration of photoreceptors comprises
PT   administering to a subject vascular endothelial growth factor 2
PT   (VEGF-2)
XX
PS   Claim 4; Fig 2a-d; 252pp; English.
XX
CC   Administration of vascular endothelial growth factor 2 (VEGF-2)
CC   to a patient can be used for treating injury or degeneration of
CC   photoreceptors associated with e.g. angioid streaks, retinitis
CC   pigmentosa, age-related macular degeneration, diabetic retinopathy,
CC   etc. VEGF-2 promotes angiogenesis, the formation of new blood
CC   vessels in the retina.
XX
SQ   Sequence   350 AA;


  Query Match             100.0%;  Score 350;  DB 21;  Length 350;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches  350;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 MTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKT 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1 mtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilksidnewrkt 60

Qy      61 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      61 qcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsylsktlfeit 120

Qy     121 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMW 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     121 vplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaanktcptnymw 180

Qy     181 NNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE 240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     181 nnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcraglrpascgphke 240

Qy     241 LDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECTESPQKC 300
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     241 ldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcacectespqkc 300

Qy     301 LLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWQRPQMS 350
           ||||||||||||||||||||||||||||||||||||||||||||||||||
Db     301 llkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsywqrpqms 350


RESULT   4
AAY97577
ID   AAY97577 standard; Protein; 350 AA.
XX
AC   AAY97577;
XX
DT   05-APR-2001  (first entry)
XX
DE   Human VEGF-2 protein sequence.
XX
KW   Human; angiogenic protein; wound healing; vascular tissue repair;
KW   peripheral arterial disease; critical limb ischaemia; coronary disease;
KW   angiogenesis; tumour; inflammation; diabetic retinopathy; psoriasis;
KW   rheumatoid arthritis; autoimmune disease; allergy; cancer; therapy;
KW   infectious disease; neurodegeneration;
KW   vascular endothelial growth factor-2; VEGF-2.
XX
OS   Homo sapiens.
XX
PN   WO200075163-A1.
XX
PD   14-DEC-2000.
XX
PF   01-JUN-2000; 2000WO-US14925.
XX
PR   03-JUN-1999;   99US-0137796.
XX
PA   (HUMA-) HUMAN GENOME SCI INC.
XX
PI   Rosen CA,  Ruben SM,  Hu J,  Cao L;
XX
DR   WPI; 2001-071057/08.
DR   N-PSDB; AAA91010.
XX
PT   New nucleic acid encoding angiogenic proteins, useful e.g. for
PT   promoting healing of wounds and treating peripheral arterial disease,
PT   critical limb ischaemia or coronary disease -
XX
PS   Disclosure; Fig 2; 244pp; English.
XX
CC   This sequence is vascular endothelial growth factor-2 (VEGF-2),
CC   which is an angiogenic protein of the invention. The angiogenic proteins
CC   and the DNA sequences encoding them, are used to prevent, treat or
CC   ameliorate disease and to detect diseases, or susceptibility, by
CC   detecting mutations or the presence or amount of angiogenic protein
CC   expression. Particularly they are used to stimulate wound healing,
CC   growth of damaged bone and tissue, and for repair of vascular tissue,
CC   especially peripheral arterial disease, critical limb ischaemia or
CC   coronary disease. Antagonists of the sequences are used to inhibit
CC   angiogenesis in tumours and to treat inflammation (where associated with
CC   increased vascular permeability), diabetic retinopathy, rheumatoid
CC   arthritis or psoriasis. Agonists are also useful for stimulating
CC   (lymph)angiogenesis. The proteins are also used to identify specific
CC   binding agents (potential therapeutic agents) and to raise antibodies.
CC   The antibodies are useful as therapeutic (ant)agonists; for detection,
CC   purification and targeting of proteins for in vivo or in vitro diagnosis
CC   (including imaging) or for therapy (including when linked to e.g. a label
CC   or cytotoxin); and for immunotyping of cells, e.g. for detecting minimal
CC   residual disease or haematopoietic progenitor/stem cells. It is also
CC   contemplated that the sequences might be useful for treating a very wide
CC   range of other disorders, e.g. autoimmune diseases; allergy; cancer;
CC   infectious diseases (viral, bacterial, fungal or parasitic);
CC   neurodegeneration, also as chemotactic agents or for stimulating
CC   regeneration of the nervous system etc.
XX
SQ   Sequence   350 AA;


  Query Match             100.0%;  Score 350;  DB 22;  Length 350;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches  350;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 MTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKT 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1 mtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilksidnewrkt 60

Qy      61 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      61 qcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsylsktlfeit 120

Qy     121 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMW 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     121 vplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaanktcptnymw 180

Qy     181 NNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE 240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
```

```
Db    181 nnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcraglrpascgphke 240

Qy    241 LDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECTESPQKC 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    241 ldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcacectespqkc 300

Qy    301 LLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWQRPQMS 350
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db    301 llkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsywqrpqms 350


RESULT   5
AAY30518
ID   AAY30518 standard; Protein; 419 AA.
XX
AC   AAY30518;
XX
DT   16-NOV-1999  (first entry)
XX
DE   Vascular endothelial growth factor-2 (VEGF-2).
XX
KW   Human vascular endothelial growth factor-2; VEGF-2;
KW   vascular endothelial cell growth; endothelial cell migration;
KW   angiogenesis; blood pressure; blood flow; immune system disorder;
KW   immune cell; cancer; autoimmune disorder; blood protein disorder;
KW   ataxia telangiectasia; common variable immunodeficiency;
KW   Digeorge syndrome; HIV infection; HTLV-BLV infection;
KW   leukocyte adhesion deficiency syndrome; lymphopenia;
KW   phagocyte bactericidal dysfunction; severe combined immunodeficiency;
KW   Wiskott-Aldrich disorder; anemia; thrombocytopenia; hemoglobinuria;
KW   allergy; asthma; allergic asthma.
XX
OS   Homo sapiens.
XX
PN   WO9946364-A1.
XX
PD   16-SEP-1999.
XX
PF   10-MAR-1999;   99WO-US05021.
XX
PR   13-MAR-1998;   98US-0042105.
PR   30-JUN-1998;   98US-0107997.
XX
PA   (HUMA-) HUMAN GENOME SCI INC.
XX
PI   Rosen CA,  Cao L,  Hu J;
XX
DR   WPI; 1999-551399/46.
DR   N-PSDB; AAZ10523.
XX
PT   New human vascular endothelial growth factor-2, used for treating, e.g.
PT   immune disorders and cancers  -
XX
PS   Claim 12; Fig 1A-E; 222pp; English.
XX
CC   The present sequence represents vascular endothelial growth factor-2
CC   (VEGF-2). The VEGF-2 polypeptides have activities similar to VEGF. The
CC   VEGF-2 polypeptides stimulate the growth of vascular endothelial cells,
CC   stimulate endothelial cell migration, stimulate angiogenesis, decrease
CC   blood pressure, and increase blood flow. The polynucleotides and
CC   polypeptides can be used for preventing, treating or ameliorating a
CC   medical condition. The VEGF-2 polypeptides or polynucleotides may be
CC   useful in treating deficiencies or disorders of the immune system, by
CC   activating or inhibiting the proliferation, differentiation, or
CC   mobilization (chemotaxis) of immune cells. The etiology of these immune
CC   deficiencies or disorders may be genetic, somatic, such as cancer or
CC   some autoimmune disorders, acquired (e.g. by chemotherapy or toxins), or
CC   infectious. Examples of immunologic deficiency syndromes include blood
CC   protein disorders, ataxia telangiectasia, common variable
CC   immunodeficiency, Digeorge syndrome, HIV infection, HTLV-BLV infection,
CC   leukocyte adhesion deficiency syndrome, lymphopenia, phagocyte
CC   bactericidal dysfunction, severe combined immunodeficiency (SCIDs),
CC   Wiskott-Aldrich disorder, anemia, thrombocytopenia, or hemoglobinuria.
CC   They can also be used to modulate emostatic or thrombolytic activity.
CC   Similarly allergic reactions and conditions such as asthma (particularly
CC   allergic asthma) or other respiratory problems, may also be treated.
XX
SQ   Sequence   419 AA;


  Query Match             100.0%;  Score 350;  DB 20;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches  350;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 MTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     70 mtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilksidnewrkt 129

Qy     61 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    130 qcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsylsktlfeit 189

Qy    121 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMW 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    190 vplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaanktcptnymw 249

Qy    181 NNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    250 nnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcraglrpascgphke 309

Qy    241 LDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECTESPQKC 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    310 ldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcacectespqkc 369

Qy    301 LLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWQRPQMS 350
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db    370 llkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsywqrpqms 419


RESULT   6
AAY22320
ID   AAY22320 standard; Protein; 419 AA.
XX
AC   AAY22320;
XX
DT   22-SEP-1999  (first entry)
XX
DE   Full length human VEGF2 protein sequence.
XX
KW   VEGF2; vascular endothelial growth factor 2; angiogenesis; bone damage;
KW   endothelial cell proliferation; tissue damage; therapy.
XX
OS   Homo sapiens.
XX
PN   US5932540-A.
XX
PD   03-AUG-1999.
XX
PF   24-DEC-1997;   97US-0999811.
XX
PR   24-DEC-1997;   97US-0999811.
PR   08-MAR-1994;   94US-0207550.
PR   06-JUN-1995;   95US-0465968.
XX
PA   (HUMA-) HUMAN GENOME SCI INC.
XX
PI   Cao L,  Hu J,  Rosen CA;
XX
DR   WPI; 1999-443606/37.
DR   N-PSDB; AAX84837.
XX
PT   Vascular endothelial growth factor 2 for wound healing and vascular
PT   repair
XX
PS   Claim 1; Fig 1; 49pp; English.
XX
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CC   This sequence is the vascular endothelial growth factor 2 (VEGF2),
CC   of the invention. The isolated polypeptide is useful for stimulating
CC   angiogenesis, by promoting the proliferation of endothelial cells, for
CC   the treatment of a wound, or for the treatment of tissue or bone damage.
XX
SQ   Sequence   419 AA;


  Query Match             100.0%;  Score 350;  DB 20;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches  350;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 MTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     70 mtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilksidnewrkt 129

Qy     61 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    130 qcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsylsktlfeit 189

Qy    121 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMW 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    190 vplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaanktcptnymw 249

Qy    181 NNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    250 nnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcraglrpascgphke 309

Qy    241 LDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECTESPQKC 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    310 ldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcacectespqkc 369

Qy    301 LLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWQRPQMS 350
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db    370 llkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsywqrpqms 419


RESULT   7
AAY97144
ID   AAY97144 standard; Protein; 419 AA.
XX
AC   AAY97144;
XX
DT   22-DEC-2000  (first entry)
XX
DE   Vascular endothelial growth factor-2 (VEGF-2).
XX
KW   Vascular endothelial growth factor 2; VEGF-2; retina; angiogenesis;
KW   treatment; injury; degeneration; photoreceptors; eye;
KW   angioid streaks; retinitis; pigmentosa; human;
KW   age-related macular degeneration; diabetic retinopathy.
XX
OS   Homo sapiens.
XX
PN   WO200045835-A1.
XX
PD   10-AUG-2000.
XX
PF   07-FEB-2000; 2000WO-US03047.
XX
PR   08-FEB-1999;   99US-0119179.
PR   12-FEB-1999;   99US-0119926.
PR   03-JUN-1999;   99US-0137796.
PR   22-DEC-1999;   99US-0171505.
XX
PA   (HUMA-) HUMAN GENOME SCI INC.
XX
PI   Rosen CA,  Alderson R,  Melder R,  Roschke V,  Ruben SM;
XX
DR   WPI; 2000-532862/48.
DR   N-PSDB; AAA52080.
XX
PT   Treating injury or degeneration of photoreceptors comprises
PT   administering to a subject vascular endothelial growth factor 2
PT   (VEGF-2)
XX
PS   Claim 31; Fig 1a-e; 252pp; English.
XX
CC   Administration of vascular endothelial growth factor 2 (VEGF-2)
CC   to a patient can be used for treating injury or degeneration of
CC   photoreceptors associated with e.g. angioid streaks, retinitis
CC   pigmentosa, age-related macular degeneration, diabetic retinopathy,
CC   etc. VEGF-2 promotes angiogenesis, the formation of new blood
CC   vessels in the retina.
XX
SQ   Sequence   419 AA;


  Query Match             100.0%;  Score 350;  DB 21;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches  350;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 MTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     70 mtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilksidnewrkt 129

Qy     61 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    130 qcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsylsktlfeit 189

Qy    121 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMW 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    190 vplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaanktcptnymw 249

Qy    181 NNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    250 nnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcraglrpascgphke 309

Qy    241 LDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECTESPQKC 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    310 ldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcacectespqkc 369

Qy    301 LLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWQRPQMS 350
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db    370 llkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsywqrpqms 419


RESULT   8
AAY97570
ID   AAY97570 standard; Protein; 419 AA.
XX
AC   AAY97570;
XX
DT   05-APR-2001  (first entry)
XX
DE   Human VEGF-B protein sequence.
XX
KW   Human; angiogenic protein; wound healing; vascular tissue repair;
KW   peripheral arterial disease; critical limb ischaemia; coronary disease;
KW   angiogenesis; tumour; inflammation; diabetic retinopathy; psoriasis;
KW   rheumatoid arthritis; autoimmune disease; allergy; cancer; therapy;
KW   infectious disease; neurodegeneration;
KW   vascular endothelial growth factor-B; VEGF-B.
XX
OS   Homo sapiens.
XX
PN   WO200075163-A1.
XX
PD   14-DEC-2000.
XX
PF   01-JUN-2000; 2000WO-US14925.
XX
PR   03-JUN-1999;   99US-0137796.
XX
PA   (HUMA-) HUMAN GENOME SCI INC.
XX
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PI   Rosen CA,  Ruben SM,  Hu J,  Cao L;
XX
DR   WPI; 2001-071057/08.
DR   N-PSDB; AAA91004.
XX
PT   New nucleic acid encoding angiogenic proteins, useful e.g. for
PT   promoting healing of wounds and treating peripheral arterial disease,
PT   critical limb ischaemia or coronary disease -
XX
PS   Claim 11; Fig 1; 244pp; English.
XX
CC   This sequence is vascular endothelial growth factor-B (VEGF-B),
CC   which is an angiogenic protein of the invention. The angiogenic proteins
CC   and the DNA sequences encoding them, are used to prevent, treat or
CC   ameliorate disease and to detect diseases, or susceptibility, by
CC   detecting mutations or the presence or amount of angiogenic protein
CC   expression. Particularly they are used to stimulate wound healing,
CC   growth of damaged bone and tissue, and for repair of vascular tissue,
CC   especially peripheral arterial disease, critical limb ischaemia or
CC   coronary disease. Antagonists of the sequences are used to inhibit
CC   angiogenesis in tumours and to treat inflammation (where associated with
CC   increased vascular permeability), diabetic retinopathy, rheumatoid
CC   arthritis or psoriasis. Agonists are also useful for stimulating
CC   (lymph)angiogenesis. The proteins are also used to identify specific
CC   binding agents (potential therapeutic agents) and to raise antibodies.
CC   The antibodies are useful as therapeutic (ant)agonists; for detection,
CC   purification and targeting of proteins for in vivo or in vitro diagnosis
CC   (including imaging) or for therapy (including when linked to e.g. a label
CC   or cytotoxin); and for immunotyping of cells, e.g. for detecting minimal
CC   residual disease or haematopoietic progenitor/stem cells. It is also
CC   contemplated that the sequences might be useful for treating a very wide
CC   range of other disorders, e.g. autoimmune diseases; allergy; cancer;
CC   infectious diseases (viral, bacterial, fungal or parasitic);
CC   neurodegeneration, also as chemotactic agents or for stimulating
CC   regeneration of the nervous system etc.
XX
SQ   Sequence   419 AA;


  Query Match             100.0%;  Score 350;  DB 22;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches  350;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 MTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      70 mtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilksidnewrkt 129

Qy      61 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     130 qcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsylsktlfeit 189

Qy     121 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMW 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     190 vplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaanktcptnymw 249

Qy     181 NNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     250 nnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcraglrpascgphke 309

Qy     241 LDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECTESPQKC 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     310 ldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcacectespqkc 369

Qy     301 LLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWQRPQMS 350
          |||||||||||||||||||||||||||||||||||||||||||||||||||
Db     370 llkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsywqrpqms 419


RESULT   9
AAW86237
ID   AAW86237 standard; protein; 399 AA.
XX
AC   AAW86237;
XX
DT   16-FEB-1999  (first entry)
XX
DE   Human VEGF-C full length sequence.
XX
KW   VEGF; VRP; vascular endothelial growth factor; VEGF-related protein;
KW   recombinant; truncated; gene therapy; angiogenesis; cardiac ischaemia;
KW   coronary; collateral vessel development; cell growth; migration; heart;
KW   lower limb ischaemia; stroke; peripheral vascular disease; intestine;
KW   wound healing; skin; vascular permeability.
XX
OS   Homo sapiens.
XX
PN   WO9849300-A2.
XX
PD   05-NOV-1998.
XX
PF   20-APR-1998;   98WO-US07801.
XX
PR   25-APR-1997;   97US-0842984.
XX
PA   (COLL-) COLLATERAL THERAPEUTICS.
XX
PI   Bohlen P;
XX
DR   WPI; 1999-009426/01.
XX
PT   New truncated vascular endothelial growth factor-related protein
PT   subunits - lack part of the N-terminal sequence, used to stimulate
PT   angiogenesis, e.g. for treating heart disease and ischaemia
XX
PS   Claim 5; Fig 2D; 113pp; English.
XX
CC   The invention relates to truncated VRP (vascular endothelial growth
CC   factor (VEGF)-related protein) subunits that have at least one amino
CC   acid N-terminal to the first Cys of the core sequence deleted. Host
CC   cells transformed or transfected with expression vectors containing
CC   nucleic acids encoding the truncated VRP subunits are used to produce
CC   the truncated proteins recombinantly. The truncated VRP subunits,
CC   optionally expressed from gene therapy vectors, have in vivo and in vitro
CC   angiogenic activity and are used to stimulate angiogenesis, particularly
CC   coronary collateral vessel development in cases of cardiac ischaemia; to
CC   stimulate endothelial cell growth and migration in vitro; to treat heart
CC   disease; to treat ischaemia (e.g.cardiac, chronic coronary or chronic
CC   lower limb ischaemia; stroke and peripheral vascular disease); to promote
CC   healing of wounds (of skin or intestines), and to increase vascular
CC   permeability. Sequences AAW86234 to AAW86239 represent full length VRP
CC   sequences from which the truncated fragments are created.
XX
SQ   Sequence   399 AA;


  Query Match             98.3%;  Score 344;  DB 20;  Length 399;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches  344;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 MTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      50 mtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilksidnewrkt 109

Qy      61 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     110 qcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsylsktlfeit 169

Qy     121 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMW 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     170 vplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaanktcptnymw 229

Qy     181 NNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     230 nnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcraglrpascgphke 289

Qy     241 LDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECTESPQKC 300
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          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    290 ldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcacectespqkc 349

Qy    301 LLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYW 344
          ||||||||||||||||||||||||||||||||||||||||||||
Db    350 llkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsyw 393


RESULT  10
AAW17837
ID   AAW17837 standard; Protein; 419 AA.
XX
AC   AAW17837;
XX
DT   13-JAN-1998  (first entry)
XX
DE   Human foetal liver kinase A binding protein flk-1bp.
XX
KW   Foetal liver kinase 1 binding protein; human; flk-1bp;
KW   receptor tyrosine kinase; vasculogenesis; angiogenesis;
KW   wound healing; tumour; therapy; antagonist; antibody.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Peptide         1..20
FT                   /label= Sig_peptide
FT   Protein         21..419
FT                   /label= Mat_protein
FT                   /note= "(Claim 10)"
FT   Peptide         21..35
FT                   /label= N-terminal
FT                   /note= "(Claim 9)"
XX
PN   WO9717442-A1.
XX
PD   15-MAY-1997.
XX
PF   05-NOV-1996;   96WO-US17584.
XX
PR   08-NOV-1995;   95US-0554374.
XX
PA   (IMMV ) IMMUNEX CORP.
XX
PI   Lyman SD;
XX
DR   WPI; 1997-281031/25.
DR   N-PSDB; AAT68811.
XX
PT   DNA encoding a human foetal liver kinase 1 binding protein  - used
PT   to treat conditions with insufficient protein, deliver agents to
PT   cells and identify antagonists to treat protein-mediated conditions
XX
PS   Claim 1; Page 30-32; 43pp; English.
XX
CC   This polypeptide comprises a human foetal liver kinase 1 binding
CC   protein (flk-1bp) (see AAW17837) that binds to the receptor tyrosine
CC   kinase flk-1 expressed on vascular endothelial and other cells.
CC   The mature flk1-bp can be secreted from host cells transformed with
CC   an expression vector including an isolated flk-1bp cDNA clone (see
CC   AAT68811).  Flk-1bp can be used to isolate cells to which it binds,
CC   for use in studying the roles of such cells and of flk-1 in
CC   vasculogenesis and angiogenesis.  Angiogenesis inhibition or
CC   increased vascularisation may be clinically desirable (e.g. to
CC   suppress solid tumour growth or in wound healing, respectively).
CC   The flk-1bp can be administered to treat conditions with defective
CC   or insufficient flk-1.  Polypeptides may also act as carriers to
CC   deliver diagnostic/therapeutic agents to cells to which flk1-bp
CC   binds, to generate antibodies, and to identify flk-1bp antagonists
CC   useful for treating flk-1bp mediated conditions.
XX
SQ   Sequence   419 AA;

  Query Match             98.3%;  Score 344;  DB 18;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches  344;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 MTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     70 mtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilksidnewrkt 129

Qy     61 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    130 qcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsylsktlfeit 189

Qy    121 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMW 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    190 vplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaanktcptnymw 249

Qy    181 NNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    250 nnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcraglrpascgphke 309

Qy    241 LDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECTESPQKC 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    310 ldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcacectespqkc 369

Qy    301 LLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYW 344
          ||||||||||||||||||||||||||||||||||||||||||||
Db    370 llkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsyw 413


RESULT  11
AAW00932
ID   AAW00932 standard; Protein; 419 AA.
XX
AC   AAW00932;
XX
DT   10-NOV-1997  (first entry)
XX
DE   Human Flt4 receptor tyrosine kinase ligand VEGF-C.
XX
KW   VEGF-C; Flt4; receptor tyrosine kinase; VEGFR-3; human;
KW   vascular endothelial growth factor receptor-3; ligand;
KW   angiogenesis; wound healing; lymph vessel; lymphangioma;
KW   cancer; metastasis; therapy; diagnosis; antibody; inhibitor.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Peptide         1..102
FT                   /label= Prepro_peptide
FT   Peptide         32..227
FT                   /note= "preferred active fragment of VEGF-C,
FT                   retaining Flt4 ligand activity (Claim 15)"
FT   Peptide         103..217
FT                   /note= "preferred active fragment of VEGF-C,
FT                   retaining Flt4 ligand activity (Claim 12)"
FT   Peptide         103..225
FT                   /note= "preferred active fragment of VEGF-C,
FT                   retaining Flt4 ligand activity (Claim 13)"
FT   Peptide         103..227
FT                   /note= "preferred active fragment of VEGF-C,
FT                   retaining Flt4 ligand activity (Claim 14)"
FT   Peptide         113..213
FT                   /note= "preferred active fragment of VEGF-C,
FT                   retaining Flt4 ligand activity (Claim 10)"
FT   Peptide         113..227
FT                   /note= "preferred active fragment of VEGF-C,
FT                   retaining Flt4 ligand activity (Claim 11)"
FT   Peptide         131..211
FT                   /note= "preferred active fragment of VEGF-C,
FT                   retaining Flt4 ligand activity (Claim 9)"
FT   Peptide         161..221
FT                   /note= "preferred active fragment of VEGF-C,
```

```
FT                          retaining Flt4 ligand activity (Claim 8)"
XX
PN   WO9705250-A2.
XX
PD   13-FEB-1997.
XX
PF   01-AUG-1996;   96WO-FI00427.
XX
PR   28-JUN-1996;   96US-0671573.
PR   01-AUG-1995;   95US-0510133.
PR   12-JAN-1996;   96US-0585895.
PR   14-FEB-1996;   96US-0601132.
XX
PA   (UYHE-) UNIV HELSINKI LICENSING LTD OY.
XX
PI   Alitalo K,  Joukov V;
XX
DR   WPI; 1997-145688/13.
DR   N-PSDB; AAT84276.
XX
PT   Flt4 receptor tyrosine kinase ligand and related nucleic acid - used
PT   to modulate growth of endothelial cells and for diagnosis of
PT   endothelial cell diseases
XX
PS   Claim 7; Page 112-113; 183pp; English.
XX
CC   This polypeptide comprises the pre-pro sequence of human VEGF-C,
CC   a novel ligand that binds specifically to human Flt4 receptor
CC   tyrosine kinase (VEGFR-3), stimulating phosphorylation of the
CC   receptor.  Its sequence was deduced from a cDNA clone (AAT84276)
CC   obtd. from a PC-3 prostatic adenocarcinoma cell (ATCC CRL 1435)
CC   library.  The polypeptide, or its active fragments, can be
CC   expressed in transformed or transfected host cells for use in
CC   claimed methods for detecting endothelial cells (e.g. to image
CC   lymphatic vessels, endothelial venules, Flt4 receptor in
CC   histochemical tissue) and also to modulate the growth of mammalian
CC   endothelial cells (e.g. to accelerate angiogenesis and to promote
CC   endothelial function of lymphatic vessels).  Inhibitors of
CC   VEGF-C, such as antibodies, can be used to control endothelial
CC   cell proliferation, e.g. lymphangioma or metastatic cancer.
CC   Mouse and quail VEGF-C sequences (see AAW00934-35) have also been
CC   isolated.
XX
SQ   Sequence   419 AA;


  Query Match             98.3%;  Score 344;  DB 18;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches  344;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 MTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKT 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      70 mtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilksidnewrkt 129

Qy      61 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     130 qcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsylsktlfeit 189

Qy     121 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMW 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     190 vplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaanktcptnymw 249

Qy     181 NNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE 240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     250 nnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcraglrpascgphke 309

Qy     241 LDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECTESPQKC 300
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     310 ldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcacectespqkc 369

Qy     301 LLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYW 344
           |||||||||||||||||||||||||||||||||||||||||||
Db     370 llkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsyw 413
```

```
RESULT  12
AAW75740
ID   AAW75740 standard; Protein; 419 AA.
XX
AC   AAW75740;
XX
DT   20-NOV-1998  (first entry)
XX
DE   Human vascular endothelial growth factor C protein.
XX
KW   Flt4; vascular endothelial growth factor C; vascular endothelial cell;
KW   lymphatic endothelial cell; myelopoiesis; angiogeneses; inflammation;
KW   lymphangiogenesis; oedema; elephantiasis; Milroy's disease.
XX
OS   Homo sapiens.
XX
PN   WO9833917-A1.
XX
PD   06-AUG-1998.
XX
PF   02-FEB-1998;   98WO-US01973.
XX
PR   05-FEB-1997;   97US-0795430.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
PA   (UYHE-) UNIV HELSINKI LICENSING LTD.
XX
PI   Alitalo K,  Joukov V;
XX
DR   WPI; 1998-437470/37.
DR   N-PSDB; AAV52576.
XX
PT   New isolated vascular endothelial growth factor polypeptide(s) -
PT   used to develop products for treating, e.g. cancers, inflammation,
PT   oedema, granulocytopenia or for wound healing or tissue
PT   transplantation
XX
PS   Claim 1; Page 112-115; 177pp; English.
XX
CC   The vascular endothelial growth factor C (VEGF-C) polypeptides have
CC   activities affecting growth and migration of vascular endothelial cells,
CC   promoting growth of lymphatic endothelial cells and lymphatic vessels,
CC   increasing vascular permeability, and affecting myelopoiesis.  The
CC   products can be used for stimulating angiogeneses, for inhibiting
CC   angiogenesis, for stimulating lymphangiogenesis, treatment or prevention
CC   of inflammation, oedema, elephantiasis, or Milroy's disease.  They can
CC   also be used to modulate myelopoiesis, e.g. treating granulocytopenia.
CC   They can also be used for modulating the growth of endothelial cells.
CC   They can also be used to stimulate lymphocyte production and maturation,
CC   and to promote or inhibit trafficking of leucocytes between tissues and
CC   lymphatic vessels or to affect migration in and out of the thymus.
XX
SQ   Sequence   419 AA;


  Query Match             98.3%;  Score 344;  DB 19;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches  344;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 MTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKT 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      70 mtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilksidnewrkt 129

Qy      61 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     130 qcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsylsktlfeit 189

Qy     121 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMW 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     190 vplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaanktcptnymw 249
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Qy    181 NNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    250 nnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcraglrpascgphke 309

Qy    241 LDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECTESPQKC 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    310 ldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcacectespqkc 369

Qy    301 LLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYW 344
          |||||||||||||||||||||||||||||||||||||||||||
Db    370 llkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsyw 413


RESULT 13
AAW86203
ID   AAW86203 standard; protein; 419 AA.
XX
AC   AAW86203;
XX
DT   16-FEB-1999  (first entry)
XX
DE   Human vascular endothelial growth factor (VEGF)-C sequence.
XX
KW   VEGF; VRP; vascular endothelial growth factor; VEGF-related protein;
KW   recombinant; truncated; gene therapy; angiogenesis; cardiac ischaemia;
KW   coronary; collateral vessel development; cell growth; migration; heart;
KW   lower limb ischaemia; stroke; peripheral vascular disease; intestine;
KW   wound healing; skin; vascular permeability.
XX
OS   Homo sapiens.
XX
PN   WO9849300-A2.
XX
PD   05-NOV-1998.
XX
PF   20-APR-1998;   98WO-US07801.
XX
PR   25-APR-1997;   97US-0842984.
XX
PA   (COLL-) COLLATERAL THERAPEUTICS.
XX
PI   Bohlen P;
XX
DR   WPI; 1999-009426/01.
XX
PT   New truncated vascular endothelial growth factor-related protein
PT   subunits - lack part of the N-terminal sequence, used to stimulate
PT   angiogenesis, e.g. for treating heart disease and ischaemia
XX
PS   Disclosure; Fig 1; 113pp; English.
XX
CC   This represents the amino acid sequence of human vascular endothelial
CC   growth factor (VEGF)-C protein. The invention provides truncated VRP
CC   (VEGF-related protein) subunits that have at least one amino acid
CC   N-terminal to the first Cys of the core sequence deleted. Host cells
CC   transformed or transfected with expression vectors containing nucleic
CC   acids encoding the truncated VRP subunits are used to produce the
CC   truncated proteins recombinantly. The truncated VRP subunits, optionally
CC   expressed from gene therapy vectors, have in vivo and in vitro angiogenic
CC   activity and are used to stimulate angiogenesis, particularly coronary
CC   collateral vessel development in cases of cardiac ischaemia; to stimulate
CC   endothelial cell growth and migration in vitro; to treat heart disease;
CC   to treat ischaemia (e.g.cardiac, chronic coronary or chronic lower limb
CC   ischaemia; stroke and peripheral vascular disease); to promote healing of
CC   wounds (of skin or intestines), and to increase vascular permeability.
XX
SQ   Sequence   419 AA;


  Query Match             98.3%;  Score 344;  DB 20;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches  344;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 MTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     70 mtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilksidnewrkt 129

Qy     61 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    130 qcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsylsktlfeit 189

Qy    121 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMW 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    190 vplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaanktcptnymw 249

Qy    181 NNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    250 nnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcraglrpascgphke 309

Qy    241 LDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECTESPQKC 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    310 ldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcacectespqkc 369

Qy    301 LLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYW 344
          |||||||||||||||||||||||||||||||||||||||||||
Db    370 llkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsyw 413


RESULT 14
AAB10648
ID   AAB10648 standard; Protein; 419 AA.
XX
AC   AAB10648;
XX
DT   19-JAN-2001  (first entry)
XX
DE   Human VEGC protein.
XX
KW   VEGF-X; vascular endothelial growth factor; human; vulnerary; cytostatic;
KW   antirheumatic; antiarthritic; antipsoriatic; antidiabetic; treatment;
KW   angiogenesis regulator; vascularization regulator; cancer; psoriasis;
KW   rheumatoid arthritis; diabetic retinopathy; blood vessel; organ repair;
KW   tissue regeneration; tissue repair; wound; dermal ulcer; pressure sore;
KW   venous sore; diabetic ulcer; burns; skin graft growth; VEGC.
XX
OS   Homo sapiens.
XX
PN   WO200037641-A2.
XX
PD   29-JUN-2000.
XX
PF   21-DEC-1999;   99WO-US30503.
XX
PR   22-DEC-1998;   98GB-0028377.
PR   18-MAR-1999;   99US-0124967.
PR   08-NOV-1999;   99US-0164131.
XX
PA   (JANC ) JANSSEN PHARM NV.
XX
PI   Gordon RD,  Sprengel JJ,  Yon JR,  Dijkmans JJH,  Gosiewska A;
PI   Dhanaraj SN,  Xu J;
XX
DR   WPI; 2000-442669/38.
XX
PT   New vascular endothelial growth factor protein, useful for treating or
PT   preventing diseases associated with inappropriate angiogenesis activity
PT   such as cancer, rheumatoid arthritis, psoriasis and wounds -
XX
PS   Disclosure; Fig 11; 127pp; English.
XX
CC   This invention describes a novel vascular endothelial growth factor-X
CC   (VEGF-X) protein (Ia) and its encoding polynucleotide (IIa) which has
CC   vulnerary, cytostatic, antirheumatic, antiarthritic, antipsoriatic and
CC   antidiabetic activity and acts as an angiogenesis and vascularization
CC   regulator. An antisense molecule of the invention is useful for treating
CC   or preventing cancer, rheumatoid arthritis, psoriasis and diabetic
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CC   retinopathy by inhibiting angiogenic activity or inappropriate
CC   vascularization including formation and proliferation of new blood
CC   vessels, growth and development of tissues, tissue regeneration and organ
CC   and tissue repair in a subject. The products of the invention are useful
CC   for preparing medicaments for treating wounds such as dermal ulcers,
CC   pressure sores, venous sores, diabetic ulcers and burns and to promote
CC   skin graft growth, tissue repair, proliferation of new blood vessels,
CC   tissue regeneration and organ repair by promoting angiogenic activity or
CC   vascularization. This sequence represents the human VEGC protein used
CC   to illustrate the method of the invention.
XX
SQ   Sequence   419 AA;


  Query Match             98.3%;  Score 344;  DB 21;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches  344;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 MTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKT 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      70 mtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilksidnewrkt 129

Qy      61 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     130 qcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsylsktlfeit 189

Qy     121 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMW 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     190 vplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaanktcptnymw 249

Qy     181 NNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE 240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     250 nnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcraglrpascgphke 309

Qy     241 LDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECTESPQKC 300
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     310 ldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcacectespqkc 369

Qy     301 LLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYW 344
           |||||||||||||||||||||||||||||||||||||||||||
Db     370 llkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsyw 413


RESULT  15
AAB29048
ID   AAB29048 standard; Protein; 419 AA.
XX
AC   AAB29048;
XX
DT   31-JAN-2001  (first entry)
XX
DE   Human VEGF-C protein sequence.
XX
KW   Human; Flt4; fms-like tyrosine kinase 4; lymphoedema;
KW   vascular endothelial growth factor receptor 3; VEGFR-3;
KW   Milroy-Nonne syndrome; lymphoedema praecox; VEGF-C;
KW   vascular endothelial growth factor C.
XX
OS   Homo sapiens.
XX
PN   WO200058511-A1.
XX
PD   05-OCT-2000.
XX
PF   26-MAR-1999;   99WO-US06133.
XX
PR   26-MAR-1999;   99WO-US06133.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
PA   (UYHE-) UNIV HELSINKI LICENSING LTD OY.
PA   (UYPI-) UNIV PITTSBURGH.
XX
PI   Ferrell RE,  Alitalo K,  Finegold DN,  Karkkainen M;
XX
DR   WPI; 2000-679298/66.
DR   N-PSDB; AAC62406.
XX
PT   Screening a human subject for increased risk of developing a lymphatic
PT   disorder, comprises assaying a nucleic acid to determine a mutation
PT   altering the sequence of a vascular endothelial growth factor
PT   receptor-3 -
XX
PS   Disclosure; Page 60-61; 76pp; English.
XX
CC   The present sequence is the protein sequence for the human vascular
CC   endothelial growth factor C (VEGF-C). It was used to demonstrate the
CC   methods of the invention, which involve the screening of individuals to
CC   determine which vascular endothelial growth factor receptor 3 (VEGFR-3,
CC   also known as Flt4 or fms-like tyrosine kinase 4) alleles they possess
CC   and thus their likelihood of developing hereditary lymphoedema.
CC   Conditions associated with lymphoedema include Milroy-Nonne syndrome,
CC   which is early onset lymphoedema and lymphoedema praecox, which is late
CC   onset.
XX
SQ   Sequence   419 AA;


  Query Match             98.3%;  Score 344;  DB 21;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches  344;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 MTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKT 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      70 mtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilksidnewrkt 129

Qy      61 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     130 qcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsylsktlfeit 189

Qy     121 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMW 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     190 vplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaanktcptnymw 249

Qy     181 NNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE 240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     250 nnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcraglrpascgphke 309

Qy     241 LDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECTESPQKC 300
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     310 ldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcacectespqkc 369

Qy     301 LLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYW 344
           |||||||||||||||||||||||||||||||||||||||||||
Db     370 llkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsyw 413


Search completed: November 15, 2001, 10:07:12
Job time: 44 sec
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GenCore version 4.5

OM protein - protein search, using sw model

Run on: November 15, 2001, 10:07:43 ; Search time 25.79 Seconds
(without alignments)
1033.776 Million cell updates/sec

Title: US-09-257-272-4
Perfect score: 350
Sequence: 1 MTVLYPEYWKMYKCQLRKGG.....SYSEEVCRCVPSYWQRPQMS 350

Scoring table: OLIGO
Gapop 60.0 , Gapext 60.0

Searched: 219241 seqs, 76174552 residues

Word size : 30

Total number of hits satisfying chosen parameters: 1

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Listing first 45 summaries

Database : PIR_68:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	344	98.3	419	2	S69207	vascular endotheli

ALIGNMENTS

RESULT 1
S69207
vascular endothelial growth factor C precursor - human
N;Alternate names: FLT4 ligand DHM
C;Species: Homo sapiens (man)
C;Date: 27-Apr-1996 #sequence_revision 01-Nov-1996 #text_change 08-Oct-1999
C;Accession: S69207; S61795; S71443; S69208; G02659
R;Joukov, V.; Pajusola, K.; Kaipainen, A.; Chilov, D.; Lahtinen, I.; Kukk, E.; Saksela,
EMBO J. 15, 1751, 1996
A;Title: Corrigendum: A novel vascular endothelial growth factor, VEGF-C, is a ligand fo
A;Reference number: S69207; MUID:96203094
A;Accession: S69207
A;Status: nucleic acid sequence not shown
A;Molecule type: mRNA
A;Residues: 1-419 <JOU>
A;Cross-references: EMBL:X94216; NID:g1177488; PIDN:CAA63907.1; PID:e221096; PID:g118200
A;Note: the nucleotide sequence was submitted to the EMBL Data Library, December 1995
A;Note: only a part of the translation is shown
A;Note: this is a revision to the sequence from reference S61795
R;Joukov, V.; Pajusola, K.; Kaipainen, A.; Chilov, D.; Lahtinen, I.; Kukk, E.; Saksela,
EMBO J. 15, 290-298, 1996
A;Title: A novel vascular endothelial growth factor, VEGF-C, is a ligand for the Flt4 (V
A;Reference number: S61795; MUID:96178224
A;Accession: S61795
A;Status: nucleic acid sequence not shown; not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 70-419 <JOU1>
A;Note: this sequence has been revised in reference S69207
A;Accession: S71443
A;Molecule type: protein
A;Residues: 'X',104-120 <JOU2>
R;Lee, J.; Gray, A.; Yuan, J.; Luoh, S.M.; Avraham, H.; Wood, W.I.
submitted to the EMBL Data Library, December 1995
A;Description: Vascular endothelial growth factor related protein (VRP): A ligand and
A;Reference number: S69208
A;Accession: S69208
A;Molecule type: mRNA
A;Residues: 1-419 <LEE>
A;Cross-references: EMBL:U43142; NID:g1150988; PIDN:AAA85214.1; PID:g1150989
R;Morris, J.C.
submitted to the EMBL Data Library, May 1996
A;Reference number: H01557
A;Accession: G02659
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-419 <MOR>
A;Cross-references: EMBL:U58111; NID:g1373426; PIDN:AAB02909.1; PID:g1373427
C;Genetics:
A;Gene: GDB:VEGFC; VRP
A;Cross-references: GDB:3890883; OMIM:601528
F;1-12/Domain: signal sequence #status predicted <SIG>
F;13-102/Domain: propeptide #status predicted <PRO>
F;103-419/Product: vascular endothelial growth factor C #status experimental <MAT>

Query Match 98.3%; Score 344; DB 2; Length 419;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 344; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy       1 MTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      70 MTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKT 129

Qy      61 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     130 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 189

Qy     121 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMW 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     190 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMW 249

Qy     181 NNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     250 NNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE 309

Qy     241 LDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECTESPQKC 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     310 LDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECTESPQKC 369

Qy     301 LLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYW 344
          |||||||||||||||||||||||||||||||||||||||||||||
Db     370 LLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYW 413
```

Search completed: November 15, 2001, 10:07:43
Job time: 75 sec

GenCore version 4.5

OM protein - protein search, using sw model

Run on: November 15, 2001, 10:08:54 ; Search time 16.77 Seconds
(without alignments)
714.933 Million cell updates/sec

Title: US-09-257-272-4
Perfect score: 350
Sequence: 1 MTVLYPEYWKMYKCQLRKGG.....SYSEEVCRCVPSYWQRPQMS 350

Scoring table: OLIGO
Gapop 60.0 , Gapext 60.0

Searched: 93435 seqs, 34255486 residues

Word size : 30

Total number of hits satisfying chosen parameters: 2

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Listing first 45 summaries

Database : SwissProt_39:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	344	98.3	419	1	VEGC_HUMAN	P49767 homo sapien
2	68	19.4	415	1	VEGC_MOUSE	P97953 mus musculu

ALIGNMENTS

RESULT 1
VEGC_HUMAN
ID VEGC_HUMAN STANDARD; PRT; 419 AA.
AC P49767;
DT 01-OCT-1996 (Rel. 34, Created)
DT 01-OCT-1996 (Rel. 34, Last sequence update)
DT 01-OCT-2000 (Rel. 40, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR C PRECURSOR (VEGF-C) (VASCULAR
DE ENDOTHELIAL GROWTH FACTOR RELATED PROTEIN) (VRP) (FLT4 LIGAND) (FLT4-
DE L).
GN VEGFC.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A., AND SEQUENCE OF 103-120.
RX MEDLINE=96178224; PubMed=8617204;
RA Joukov V., Pajusola K., Kaipainen A., Chilov D., Lahtinen I., Kukk E.,
RA Saksela O., Kalkkinen N., Alitalo K.;
RT "A novel vascular endothelial growth factor, VEGF-C, is a ligand for
RT the Flt4 (VEGFR-3) and KDR (VEGFR-2) receptor tyrosine kinases.";
RL EMBO J. 15:290-298(1996).
RN [2]
RP ERRATUM.
RX MEDLINE=96203094; PubMed=8612600;
RA Joukov V., Pajusola K., Kaipainen A., Chilov D., Lahtinen I., Kukk E.,
RA Saksela O., Kalkkinen N., Alitalo K.;
RL EMBO J. 15:1751-1751(1996).
RN [3]
RP SEQUENCE FROM N.A.
RX MEDLINE=96312526; PubMed=8700872;
RA Lee J., Gray A., Yuan J., Luoh S.-M., Avraham H., Wood W.I.;
RT "Vascular endothelial growth factor-related protein: a ligand and
RT specific activator of the tyrosine kinase receptor Flt4.";
RL Proc. Natl. Acad. Sci. U.S.A. 93:1988-1992(1996).
RN [4]
RP SEQUENCE FROM N.A.
RA Fitz L., Morris J.C., Towler P.S., Long A.J., Greco R.,
RA Burgess P., Giannotti J., Ciarletta A., Hennessey D., Kovacic S.,
RA Fitzgerald M., Scaltreto H., Weich N., Neben S., Finnerty H.,
RA Zollner R., Wang J., Nickbarg E., Gassaway R., Turner K.,
RA Wood C.R.;
RL Submitted (JUN-1996) to the EMBL/GenBank/DDBJ databases.
CC -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC CELL GROWTH.
CC -!- SUBUNIT: HOMODIMER, DISULFIDE-LINKED.
CC -!- PTM: PROBABLY PROTEOLITICALLY PROCESSED IN THE C-TERMINUS.
CC -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC ---

CC ---
DR EMBL; X94216; CAA63907.1; -.
DR EMBL; U43142; AAA85214.1; -.
DR EMBL; U58111; AAB02909.1; -.
DR HSSP; P15692; 1VPF.
DR MIM; 601528; -.
DR InterPro; IPR000072; -.
DR InterPro; IPR002400; -.
DR Pfam; PF00341; PDGF; 1.
DR PRINTS; PR00438; GFCYSKNOT.
DR PROSITE; PS00249; PDGF_1; 1.
DR PROSITE; PS50278; PDGF_2; 1.
KW Mitogen; Growth factor; Glycoprotein; Signal; Repeat.
FT SIGNAL 1 ? POTENTIAL.
FT PROPEP ? 102 POTENTIAL.
FT CHAIN 103 419 VASCULAR ENDOTHELIAL GROWTH FACTOR C.
FT DOMAIN 275 365 4 X 24 AA TANDEM REPEATS.
FT REPEAT 275 298 1.
FT REPEAT 299 322 2.
FT REPEAT 323 346 3.
FT REPEAT 347 365 4 (PARTIAL).
FT CARBOHYD 175 175 N-LINKED (GLCNAC. . .) (POTENTIAL).
FT CARBOHYD 205 205 N-LINKED (GLCNAC. . .) (POTENTIAL).
FT CARBOHYD 240 240 N-LINKED (GLCNAC. . .) (POTENTIAL).
SQ SEQUENCE 419 AA; 46883 MW; 9F598719DB3E014F CRC64;

Query Match 98.3%; Score 344; DB 1; Length 419;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 344; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy       1 MTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKT 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      70 MTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKT 129

Qy      61 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     130 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 189

Qy     121 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMW 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     190 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMW 249
```

```
Qy    181 NNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    250 NNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE 309

Qy    241 LDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECTESPQKC 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    310 LDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECTESPQKC 369

Qy    301 LLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYW 344
          |||||||||||||||||||||||||||||||||||||||||||||
Db    370 LLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYW 413
```

```
RESULT   2
VEGC_MOUSE
ID   VEGC_MOUSE     STANDARD;      PRT;   415 AA.
AC   P97953;
DT   15-JUL-1998 (Rel. 36, Created)
DT   15-JUL-1998 (Rel. 36, Last sequence update)
DT   30-MAY-2000 (Rel. 39, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR C PRECURSOR (VEGF-C) (FLT4 LIGAND)
DE   (FLT4-L).
GN   VEGFC.
OS   Mus musculus (Mouse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX   NCBI_TaxID=10090;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN=BALB/C;
RX   MEDLINE=97164697; PubMed=9012504;
RA   Kukk E., Lymboussaki A., Taira S., Kaipainen A., Jeltsch M.,
RA   Joukov V., Alitalo K.;
RT   "VEGF-C receptor binding and pattern of expression with VEGFR-3
RT   suggests a role in lymphatic vascular development.";
RL   Development 122:3829-3837(1996).
RN   [2]
RP   SEQUENCE FROM N.A.
RC   STRAIN=BALB/C;
RX   MEDLINE=97388482; PubMed=9247316;
RA   Fitz L.J., Morris J.C., Towler P., Long A., Burgess P., Greco R.,
RA   Wang J., Gassaway R., Nickbarg E., Kovacic S., Ciarletta A.,
RA   Giannotti J., Finnerty H., Zollner R., Beier D.R., Leak L.V.,
RA   Turner K.J., Wood C.R.;
RT   "Characterization of murine Flt4 ligand/VEGF-C.";
RL   Oncogene 15:613-618(1997).
CC   -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC       CELL GROWTH.
CC   -!- SUBUNIT: HOMODIMER, DISULFIDE-LINKED (BY SIMILARITY).
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; U73620; AAC52984.1; -.
DR   EMBL; U58112; AAB46707.1; -.
DR   HSSP; P15692; 1VPF.
DR   MGD; MGI:109124; Vegfc.
DR   InterPro; IPR000072; -.
DR   InterPro; IPR002400; -.
DR   Pfam; PF00341; PDGF; 1.
DR   PRINTS; PR00438; GFCYSKNOT.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Signal; Repeat.
FT   SIGNAL        1      ?       POTENTIAL.
FT   PROPEP        ?     98       POTENTIAL.
FT   CHAIN        99    415       VASCULAR ENDOTHELIAL GROWTH FACTOR C.
FT   DOMAIN      271    361       4 X 24 AA TANDEM REPEATS.
FT   REPEAT      271    294       1.
FT   REPEAT      295    318       2.
FT   REPEAT      319    342       3.
FT   REPEAT      343    361       4 (PARTIAL).
FT   CARBOHYD    171    171       N-LINKED (GLCNAC. . .) (POTENTIAL).
FT   CARBOHYD    201    201       N-LINKED (GLCNAC. . .) (POTENTIAL).
FT   CARBOHYD    236    236       N-LINKED (GLCNAC. . .) (POTENTIAL).
SQ   SEQUENCE   415 AA;  46471 MW;  D9D3DD3CECC659D6 CRC64;
```

```
  Query Match             19.4%;  Score 68;  DB 1;  Length 415;
  Best Local Similarity   100.0%;  Pred. No. 3.6e-64;
  Matches   68;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy    111 YLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAA 170
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    176 YLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAA 235

Qy    171 NKTCPTNY 178
          ||||||||
Db    236 NKTCPTNY 243
```

Search completed: November 15, 2001, 10:08:54
Job time: 146 sec

GenCore version 4.5

OM protein - protein search, using sw model

Run on: November 15, 2001, 10:08:31 ; Search time 40.97 Seconds
(without alignments)
1130.260 Million cell updates/sec

Title: US-09-257-272-4
Perfect score: 350
Sequence: 1 MTVLYPEYWKMYKCQLRKGG.....SYSEEVCRCVPSYWQRPQMS 350

Scoring table: OLIGO
Gapop 60.0 , Gapext 60.0

Searched: 425026 seqs, 132305027 residues

Word size : 30

Total number of hits satisfying chosen parameters: 3

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Listing first 45 summaries

Database : SPTREMBL_16:*
1: sp_archea:*
2: sp_bacteria:*
3: sp_fungi:*
4: sp_human:*
5: sp_invertebrate:*
6: sp_mammal:*
7: sp_mhc:*
8: sp_organelle:*
9: sp_phage:*
10: sp_plant:*
11: sp_rodent:*
12: sp_unclassified:*
13: sp_vertebrate:*
14: sp_virus:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	65	18.6	126	11	O35757	O35757 rattus norv
2	60	17.1	420	6	Q9XS50	Q9xs50 bos taurus
3	31	8.9	418	13	O57352	O57352 coturnix co

ALIGNMENTS

RESULT 1
O35757
ID O35757 PRELIMINARY; PRT; 126 AA.
AC O35757;
DT 01-JAN-1998 (TrEMBLrel. 05, Created)
DT 01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
DT 01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR-C (FRAGMENT).
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX NCBI_TaxID=10116;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=SPRAGUE-DAWLEY; TISSUE=LUNG;
RA Mandriota S.J., Pepper M.S.;
RL Submitted (JUN-1997) to the EMBL/GenBank/DDBJ databases.
DR EMBL; AF010302; AAB63248.1; -.
DR HSSP; P15692; 2VPF.
DR InterPro; IPR000072; -.
DR Pfam; PF00341; PDGF; 1.
DR PROSITE; PS50278; PDGF_2; 1.
DR SMART; SM00141; PDGF; 1.
FT NON_TER 1 1
FT NON_TER 126 126
SQ SEQUENCE 126 AA; 13977 MW; 8F365AFBC4E037B0 CRC64;

Query Match 18.6%; Score 65; DB 11; Length 126;
Best Local Similarity 100.0%; Pred. No. 2.3e-61;
Matches 65; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 111 YLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAA 170
||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 24 YLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAA 83

Qy 171 NKTCP 175
|||||
Db 84 NKTCP 88

RESULT 2
Q9XS50
ID Q9XS50 PRELIMINARY; PRT; 420 AA.
AC Q9XS50;
DT 01-NOV-1999 (TrEMBLrel. 12, Created)
DT 01-NOV-1999 (TrEMBLrel. 12, Last sequence update)
DT 01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR C PRECURSOR.
OS Bos taurus (Bovine).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
OC Bovidae; Bovinae; Bos.
OX NCBI_TaxID=9913;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=HEART;
RA Liu X., Yonekura H., Yamagishi S., Yamamoto Y., Yamamoto H.;
RT "Structure and expression of bovine VEGF family.";
RL Submitted (MAY-1997) to the EMBL/GenBank/DDBJ databases.
DR EMBL; AB004275; BAA77687.1; -.
DR HSSP; P15692; 1VPP.
DR InterPro; IPR000072; -.
DR Pfam; PF00341; PDGF; 1.
DR PROSITE; PS00249; PDGF_1; 1.
DR PROSITE; PS50278; PDGF_2; 1.
DR SMART; SM00141; PDGF; 1.
KW Signal.
FT SIGNAL 1 20 POTENTIAL.
FT CHAIN 21 420 VASCULAR ENDOTHELIAL GROWTH FACTOR C.
SQ SEQUENCE 420 AA; 46681 MW; 58BA84317A3C8E2D CRC64;

Query Match 17.1%; Score 60; DB 6; Length 420;
Best Local Similarity 100.0%; Pred. No. 1.4e-55;
Matches 60; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 103 QCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPA 162
||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 173 QCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPA 232

RESULT 3
O57352

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ID   O57352      PRELIMINARY;      PRT;   418 AA.
AC   O57352;
DT   01-JUN-1998 (TrEMBLrel. 06, Created)
DT   01-JUN-1998 (TrEMBLrel. 06, Last sequence update)
DT   01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR C PRECURSOR.
GN   VEGF-C.
OS   Coturnix coturnix japonica (Japanese quail).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
OC   Coturnix.
OX   NCBI_TaxID=93934;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=98167900; PubMed=9435294;
RA   Eichmann A., Corbel C., Jaffredo T., Breant V., Joukov V., Kumar V.,
RA   Alitalo K., Le Douarin N.M.;
RT   "Avian VEGF-C: cloning, embryonic expression pattern and stimulation
RT   of the differentiation of VEGFR2-expressing endothelial cell
RT   precursors.";
RL   Development 125:743-752(1998).
DR   EMBL; Y15837; CAA75799.1; -.
DR   HSSP; P15692; 1VPP.
DR   InterPro; IPR000072; -.
DR   InterPro; IPR002400; -.
DR   Pfam; PF00341; PDGF; 1.
DR   PRINTS; PR00438; GFCYSKNOT.
DR   ProDom; PD001629; -; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
DR   SMART; SM00141; PDGF; 1.
KW   Signal.
FT   SIGNAL        1     31       POTENTIAL.
FT   CHAIN       111    418       VASCULAR ENDOTHELIAL GROWTH FACTOR C.
SQ   SEQUENCE   418 AA;  46839 MW;  099BFCC79151BF2B CRC64;


  Query Match             8.9%;  Score 31;  DB 13;  Length 418;
  Best Local Similarity   100.0%;  Pred. No. 1.4e-24;
  Matches   31;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy     133 SFANHTSCRCMSKLDVYRQVHSIIRRSLPAT 163
           |||||||||||||||||||||||||||||||
Db     201 SFANHTSCRCMSKLDVYRQVHSIIRRSLPAT 231


Search completed: November 15, 2001, 10:08:31
Job time: 123 sec
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